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THE TREATMENT OF PNEUMONIA AS BASED UPON RECENT VIEWS AS TO ITS PATH- OLOGY.*

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In using the word pneumonia I wish to restrict it absolutely to the form variously designated as lobar, fibrinous, or croupous pneumonia; the form that in typical cases is ushered in abruptly by a chill accompanied with fever, which fever after a course of from four to nine days, if the patient is to recover, ends suddenly by crisis.

For the sake of brevity I will quote, from a paper recently contributed by me to the "Twentieth Century Practice," my views as to the sequence of events taking place in an attack of pneumonia:

"1. The occurrence of some cause of depression, either local or general, which favors the germination of pneumococci, already present in some one of the smaller tubes.

"2. The formation of a colony that spreads until it reaches the group of air vessels that are terminal to the tube in question.

"3. The setting up of an irritation in these vesicles, causing a fibrinous exudation, an emigration of leucocytes, and a diapedesis of red cells from the functional capillaries.†

"4. The formation of a colony of pneumococci in the medium afforded by this exudate.

"5. Arrest of the blood stream in the functional capillaries, followed by accumulation of free pneumonic acid in the parenchyma of the affected area.‡

"6. Overflow of exudate into neighboring lobules, starting the process in them also.

"7. Arrest of germ growth by exhaustion of the medium and the accumulation of free acid in the tis-

sue of the lung. Up to this time there has been a constant formation and absorption of toxin.

"8. Retrogressive changes in the exudate preparatory to its removal by absorption.

"9. Probably, in this latter process, formation of an antitoxic principle.

"10. Entire removal of the exudate and restoration of the vesicle to its normal condition.

"11. Resumption of the functional capillary circulation."

First, a few words as to what pneumonia is not, and then a few as to what it is. Pneumonia is not an inflammation of the lung. You can create a pneumonitis at will in any of a dozen or a hundred ways. There is only one way in which you can produce a pneumonia. You may bruise, tear, pierce, or scald the lung, you may force acrid gases into it; nay, you may introduce any foreign substance into it, including, with one exception, any conceivable pathogenic organism, and you will not get pneumonia as the result. You may get inflammation, suppuration, even gangrene, but it will not be pneumonia, and it will not have the clinical history of pneumonia. But there is just one thing that if introduced into the parenchyma of the lung will produce pneumonia always and without fail, and that is the pneumococcus. If you inject a little active pneumonic sputum through the chest wall into the substance of the lung, you will inevitably cause genuine pneumonia with all that clinically belongs to it. These facts are sufficient to differentiate between pulmonary inflammation and pneumonia, but there are other facts in the history of the latter and especially in the occurrence of crisis, which are equally significant but which I need not stop now to consider.

Nor is it enough to admit the infectious nature of the disease and to define pneumonia as an inflammation excited by the presence of a specific parasite. The parasite is there unquestionably, but it does not excite inflammation. Inflammation is a perverted nutrition, but in pneumonia the nutrition of the pulmonary parenchyma does not suffer. At the most there is only a certain amount of desquamation of the epithelium, the walls of the air-cells remaining intact and ready to resume their function the moment the exudate is removed from within the cell and stasis in the functional capillaries is relieved. There is nothing left that represents the effects of inflammation, no interstitial deposit, no

* Read before the New York Academy of Medicine, November 2, 1899. For discussion, see p. 814.

†The walls of the pulmonary capillaries being adapted for the transmission of gases possess an extreme tenuity not equalled elsewhere in the body. Moreover, they are separated from the alveolar cavity only by a single layer of pavement epithelium which affords them almost no protection or support. Hence they are exposed to the full current of the irritation caused by the micro-organism which invades the air-cell and of the toxin it produces. Under this irritation the capillary wall undergoes a partial degeneration which favors the escape through it of the various elements that go to make up the pneumonic exudate.

‡As to this accumulation, see p. 44 of vol. xvi, "Twentieth Century Practice of Medicine." Throughout this paper the above-mentioned article has been freely used.

obliteration of vessels, no loss of substance, no new formations. The tremendously active process that has been going on in the lung, enough in any other organ to have spoiled the structure for future use, has vanished and left no trace behind. And for this what have we to thank? Simply the independent nutrient circulation heretofore entirely overlooked in its relation to the pathology of pneumonia. While the functional capillaries under the specific irritation caused by the parasite have been permitting, as we have seen, the exudation of fibrin, the emigration of leucocytes, and the diapedesis of red corpuscles into the air-cells, until at last the pressure of the alveolar contents has become more than the thin walls of the right heart could overcome, and complete stasis of the functional circulation has taken place, the sturdy left heart has been taking care of the nutrition of the suffering area, and pumping its blood regularly and steadily through the nutrient capillaries. Had it failed for a moment to do this the battle would have been lost, and wholesale necrosis would have been the inevitable result.

Here then we see at the same time, and in the same area, the action of the right heart completely suspended and the action of the left heart intact. From the nature of the case this could take place nowhere else than in the lung, *and this removes pneumonia out of the category of diseases for which analogous conditions can be found in other parts of the body.* For this reason all our notions of inflammation in general are *wholly inapplicable* to the condition in question.

But how, it may be asked, do we know that there is this restriction of the process to the functional circulation? How do we know that both circulations are not involved? The answer to this is found in anatomical conditions easily demonstrated. In the pneumonic lung we find the capillaries which are continuations of the branches of the pulmonary artery completely thrombosed, and this thrombosis extends back toward the heart until the pulmonary branch is reached that goes to the affected lobe. If the entire lung is involved the thrombus will extend back to the bifurcation of the pulmonary artery. Not infrequently the clot grows out into the lumen of the latter vessel, and sometimes this projecting portion breaks off and is carried by the blood current into the unaffected lung, producing immediate death.¹

Contrast with this the condition of the nutrient capillaries derived from the bronchial arteries. These are found completely free, so that the blood might circulate through them unhindered and supply the parenchyma of the lung without interruption. It is true that in a small number of cases a

branch of one of the bronchial vessels becomes obstructed, and then we get a corresponding area of gangrene, just what would befall the whole affected portion of the lung if instead of a pneumonia we had a pneumonitis of the same colossal proportions.

If, then, in pneumonia we are not dealing with an inflammation, how are we to characterize the local process? The answer to this is that we have a process of germ culture going on in a culture medium, which medium is supplied from vessels that do not participate in the nutrition of the part, but at the same time are susceptible to the action of the specific irritant furnished by the specific germ in question. Each air cell thus becomes in effect a tiny test-tube in which a colony is growing, the exudate serving as a culture medium.* It is this culture that constitutes the essence of pneumonia. The complicated manifestations that complete the clinical picture are epiphenomena. Why this peculiar local reaction should follow this one form of irritation and no other we cannot tell, any more than we can tell why the skin should react to the poisonous emanation from the rhus toxicodendron in a manner different from its reaction to all other forms of irritation. But medicine is full of similar pathological, as well as biological, puzzles.

Two of the epiphenomena attending the culture process in the lung are of extreme importance, constituting singly or together the chief menace to life. These are, first, the infection of the system by the toxin formed in the lung, and, second, the embarrassment of the respiratory function resulting from the presence of the exudate in the air-cells. From the first of these we have the chill, the fever, the nervous and muscular prostration, and a host of complications depending on toxemia, some one or more of which arise sooner or later in a large number of cases. From the second we have the tendency to asphyxia, and from the two combined the ever-present danger of failure of the right heart.

This being a very brief review of the pathology of pneumonia as it appears to me, let us see in how far it affords a basis for a rational treatment. Heretofore the treatment of pneumonia has been almost wholly symptomatic, and on the whole we must admit that it has been far from satisfactory. In hospital practice the world over from one-fourth to one-third of the cases have proved fatal. In private practice the results have been somewhat more favor-

* A schematic illustration will sometimes serve a useful purpose. If a hemorrhage should take place from a villi within the urinary bladder and the clot should become infected by germs from without, we should scarcely call this a cystitis, although the vesical mucosa might suffer somewhat from the process going on in the viscus. The case would not be materially altered if the germs were introduced as the first step, and by their irritation induced the hemorrhage, provided the process ceased with the removal of the clot.

able. But the fact still remains that pneumonia destroys more lives than any two other acute diseases combined.

Within the present decade, however, there seems to have been a dawning of a better era. With the recognition of the specific microbe came necessarily the idea of an anti-microbic treatment. Unhappily, development along this line has been hindered by the persistent hold upon the professional mind that the idea of a pneumonitis has maintained. The utmost concession has been that the specific organism excited a local inflammation, which once excited was like any other inflammation. The matter has been still further complicated by the assumption in some quarters that the infection was first general, and afterward became localized in the lung. According to this view, the pulmonary lesion was the specific eruption that accompanied pneumonic fever, as the cutaneous eruptions accompany the fevers of measles, scarlatina, and smallpox. The one idea that has found most difficult acceptance is that the beginning of pneumonia is the lodgment of the pneumococcus in the air-cell, and that all the other phenomena are subsequent to and consequent upon this lodgment, no matter in what order they become apparent, either to the patient or to the physician. Thus, the patient has pneumonia before he has fever, or a chill, or a stitch in the side, or begins to cough. He will probably have had pneumonia for many hours, or perhaps some days before the local changes attain to such a development as to make themselves apparent by the clumsy and insensitive methods of auscultation and percussion. Yet with what dogmatic assurance we assert that there is no pneumonia present if we fail to detect percussion dulness or a *crépitant râle*. If we are especially cautious we will say that the patient may get pneumonia later, but he certainly has not got it now. Because the flames are not bursting from every window we ignore the smouldering fire that is eating its way through the interior of the building.

Grasping fully that all the phenomena of the disease center in the colonies of bacteria growing in the air-cells, we have at least the basis for rational therapeutic effort. The problem before us is, first of all, to arrest or inhibit this growth. We shall be assisted in solving this problem by a knowledge of the peculiarities of the organism with which we have to deal. Fortunately, the pneumococcus *lanceolatus* has been studied by many competent observers, and its life-history and conditions of growth are thoroughly established. The facts most important for our purpose are, first, that "the life of the organism is short, not exceeding ten or twelve days at the most in artificial cultures. The second is, that of all

known germs this is perhaps the most sensitive to its environment, laboratory experience showing that it can be cultivated successfully only by the most careful attention to its habits and peculiarities. The slightest deviation from the conditions these impose puts an end to its growth. Furthermore, the probability of successfully inhibiting the action of a germ through the influence of an agent diffused in the blood is greatly enhanced if the germ is located in the lung. This is due to the fact that the whole mass of the blood passes through the comparatively small pulmonary circulation every time that it traverses the vastly greater systemic circuit. Hence any substance in the blood comes into much more intimate contact with a germ in the lung than it would with a germ placed elsewhere, and the assault is proportionately concentrated and energetic."

"It is true that to be fully effective a germicide designed to act within the air-cell must be employed before the circulation in the functional capillaries is arrested. After such arrest it can reach its destination only by the very narrow channel of the nutrient blood-supply. But as the pressure of the exudate is the ultimate factor in closing the functional vessels (whatever coagulating influence the morbid process may have exerted) it is not until consolidation is complete that access through these vessels is entirely cut off."

Inasmuch as the pneumococci are growing in a medium which is derived directly from the blood, it is clear that their pabulum will partake of any substance with which the blood may be charged at the time when the exudate is separated from it. Hence, if we could anticipate the lodgment of the cocci in the air-cell by 'impregnating' the blood sufficiently with a substance inimical to the growth of the organism, we should stand a chance of forestalling the local process and thus entirely preventing the disease. Such early action, however, is seldom practicable, and when the air-cell is once filled with exudate but little can be done thereafter to influence the culture process going on within it. This process will continue until the quantity of medium in the cell is exhausted or until the accumulation of pneumonic acid in the lung tissue arrests the growth of the germ. But the local process is always at first a spreading one, and there is no reason why the invasion of new cells may not be prevented, thus limiting the disease to the area already attacked.

This being the theory of the antimicrobial treatment, let us see what progress has been made toward realizing it in practice. For years past and long before anything was known of micro-organisms certain remedies have had more or less reputation as tending to cut short pneumonia. Calomel was one

of these, and many of us remember with what confidence the late Dr. Leaming prescribed his "sedative dose" of 40 or 50 grains, and how often this dose was followed by a prompt fall of temperature going on in many cases to complete desfervesence. In this he was building on the foundation of the older clinicians, who placed great faith in the value of mercury as an "antiphlogistic" in pneumonia.

Fifty years ago very few would have had the hardihood to treat a case without it. We can see now that it was not its "antiplastic," but its anti-germic effect, if I may coin a word, that gave it its value. The pneumococcus is exceedingly sensitive to the mercuric salts, and enough of the calomel would be converted into bichlorid to give a decided character to the blood and to the exudate separated from the blood. Indeed, the evidence at hand would indicate that but for the danger attending the use of considerable doses, mercury in some one of its forms might be a very satisfactory agent for combatting the pneumococcus, especially at the outset of the disease.

The *New York Medical Journal* for June and July, 1879, contains a very interesting report on the "sedative" dose of calomel, made to the Therapeutical Society of New York by Dr. Putnam Jacobi, secretary of the Committee on Antipyretics. It is a summary of the results of a collective investigation covering fifty cases in which large doses (20 to 60 grains) of calomel were given. Fourteen cases were of croupous pneumonia, all of them severe. Of these patients thirteen recovered and one died. This is a remarkable showing, and it is impossible to read the report and not yield to the conviction that in some of these cases the calomel turned the scale toward recovery. In no case was there excessive purging from so large a dose. Stomatitis occurred only twice in the fifty cases, and produced no serious inconvenience.

More recently Pieragnoli³ strongly recommended the employment of calomel in croupous pneumonia. His method consisted in the daily administration of calomel combined with opium. His results were very satisfactory. Of five patients to whom the calomel was not given, all died; of fifteen who were treated with calomel all but one recovered. Equally good was the result in children. The course of the disease was milder, the infiltration was less firm, and the wandering of the disease in the lung less marked.

Smarkovsky⁴ of Moscow claims that calomel given in doses of 5 or 6 cgm. (gr. 3/4-1) every hour until a purgative effect is produced, is capable of jugulating croupous pneumonia, and causing its abortion. This does not result, he observes, from any direct influence of the calomel upon the pulmo-

nary lesion, but from a general antiseptic action upon the toxic material circulating in the blood, thus augmenting the resistance of the organism to the morbid local process.

Granting the major proposition in the sense intended, it would be more reasonable to infer that the drug acted toward limiting the production of the poison rather than its destruction after it had reached the current of the blood. And I wish to avail myself of this opportunity to place on record my disbelief in the power of any drug taken into the circulation to neutralize or oxydize or in any way act upon the toxic product of any micro-organism, and my belief that the benefit in all such cases is from acting directly upon the organism itself to prevent or to limit the further production of toxin, the system readily taking care of that already formed.*

Quinin, though a feeble antagonist to other than malarial germs, has sufficient power to impose a considerable check upon the activity of the pneumococcus. Flint, Loomis, and many other authorities bear witness to the benefit derived from large doses of the drug, which in their hands often lessened the severity of the disease and shortened its duration, sometimes even bringing about a complete abortion. We need not be surprised at this action of quinin when we consider how thoroughly it saturates the blood, and how it pervades every portion of the system. Flint says: "As long ago as 1861 I was led by the results of the analysis of a considerable number of cases in which sulphate of quinin was given to the extent of only 15 grains daily, to the conclusion that this remedy exerted a marked curative influence on the disease. I can now (1881) bear testimony to the fact that, given in larger doses, namely, 20 to 30 grains daily, this remedy, in a certain proportion of cases, renders the disease abortive, and that when this does not follow, the disease is often modified to a greater degree than by smaller doses. Now, whatever efficacy belongs to these remedies proceeds evidently not from any direct effect upon the pulmonary affection, but from a controlling influence over the pyrexia, thus sustaining the doctrine that the disease is an essential fever."

How this abortion is to be effected simply by acting on the heat center there is no attempt to explain.

Hare⁵ expresses the belief that quinin with aconite or veratrum viride, employed before consolidation has taken place, has the power of so modifying

* The proof of this is a matter of daily observation. When we wash out a septic uterus with simple plain water, or when we open up and drain an abscess, we get an immediate fall of temperature, although we have done nothing whatever to the blood. Strictly speaking, there is no such thing as general antiseptics. The action is always local, even though brought about through the medium of the circulation.

the hyperemia in the affected area as practically to abort the local process and prevent exudation. We must believe, however, that it is not so much by "modifying the hyperemia" as by acting directly upon the micrococcus that the abortion is brought about. I am not aware that the influence of quinin upon the diplococcus has ever been tested by direct laboratory experiment.

Clemens,⁸ and subsequently Baumgarten, Oertel, and others derived great benefit from inhalations of chloroform in pneumonia. Dr. J. S. Thacher, at my suggestion, made some observations last year in the laboratory of the Presbyterian Hospital which showed that the pneumococcus was very sensitive to the influence of chloroform in the culture medium, thus giving the key to the clinical results obtained almost half a century before the specific germ was discovered.

Coming down to recent years,⁹ Robinson and Kerr⁸ are enthusiastic advocates of creosote both by the stomach and by inhalation. The pneumococcus, as we have already seen, is extremely vulnerable, and while it may not be actually killed by any vapor that could be safely taken into the lung, there is no reason why its growth should not be inhibited to a considerable extent, and the amount and virulence of the toxin materially lessened. It is no sufficient objection to this proposition that the inhaled material could not reach the air-cells of the hepatized area, since all goes to show that the most favorable conditions for general infection are supplied by the partly-filled alveoli surrounding the consolidated focus. To these cells a gaseous agent can easily penetrate.

As to the use of creosote by the mouth, we know in what large doses it is administered with safety in the treatment of tuberculosis. That it enters into the blood and reaches the lungs we have abundant evidence in the odor it imparts to the breath. A. H. Kerr says of it: "I do not say that it is a specific in pneumonia, but I do say, and with emphasis, that it is the nearest approach to one that has yet been reached. He gives the details of a case seen within twenty-four hours after the chill. The pulse was 120. Temperature 104.2° F. Respiration 40. Dulness and fine crepitant râles over the base of the left lung. Ten minims of creosote were given every two hours, and for the first day a grain of opium every three hours. The following day (the third of the disease) the pulse remained at 120, temperature 104° F., respiration 36. Twenty-four hours later (fourth day) pulse 96, temperature 102° F., respiration 26. At the next visit (fifth day) pulse 80, temperature 99° F., respiration normal, patient convalescent.

Under the head of "Note di Terapia" the *Clinica Moderna* states that it has been demonstrated that clysters of creosote, each containing from twenty-five to forty drops, are of great value in pneumonia, and cause a subsidence of all alarming phenomena of the disease.

Van Zandt¹⁰ (1898) advocates strongly the use of creosote either singly or in combination with ammonium salicylate, and reports a number of cases in which its use was followed by prompt defervescence in advance of the usual time of crisis.

In an inaugural thesis published last year, E. Corrier¹¹ discusses at length the properties of the carbonate of creosote which adapt it for use in acute pulmonary affections. He shows that it can be taken in large doses, up to a dram or more, without producing gastric irritation, and that, being slowly decomposed in the small intestine, it liberates the creosote in such a way as to keep the blood constantly charged with it even when the doses are separated by intervals of six, or even twelve, hours. Owing to this slow liberation poisonous effects are never developed with medicinal doses. [The occasional smoky urine does not imply disintegration of blood corpuscles, as at one time supposed, but is the result of a harmless chemical reaction and may be disregarded.] As in the case of creosote itself the drug is largely eliminated through the lungs, and the odor of creosote is quickly developed in the breath. The action is therefore double, first, in the blood within the tissues; second, as a vapor in contact with the pulmonary mucous membrane. These facts in connection with the powerful antiseptic quality of the remedy seem to fit it especially for use in acute pulmonary troubles. In this form too, it has the advantage of being comparatively tasteless, and therefore easy of administration.

In its effect upon the system at large the carbonate, called also creosotal, is an ether, and in so far as it is taken into the system in its combined state it acts as an ether. When broken up in the intestine into carbon dioxid and creosote the latter, which is an alcohol, acts like other alcohols as a cardiac and nerve stimulant. We have, therefore, in either case the reverse of the depressing effect which is a possible result of the use of many other powerful germicides and especially the salicylates.

For some time past the carbonate of creosote has been used extensively in the clinic of Dr. Cassoute of Marseilles, and this thesis of his pupil deals with material furnished by the clinic. Among other cases, it details three of lobar, and ten of bronchopneumonia, in which the carbonate of creosote was practically the only medicament employed. In every instance the effect upon the temperature was

most marked, defervescence being promptly effected in the cases of lobar pneumonia, while in the cases of bronchopneumonia the temperature was notably lowered and the severity and duration of the attack proportionately lessened.

The argument of Dr. Corgier is certainly a very strong one, for the selection of this as the most promising of the various medicaments yet brought forward for acting directly upon the toxic conditions present in pneumonia. The writer adopts the idea that the disease is primarily bacterial, and that we should attack the bacteria as the source of the toxin. But he speaks of pulmonary localization as if the general condition had preceded the local, and emphasizes the necessity for general as well as local antiseptics. He seems to consider the lung as the chief sufferer from a general infection, instead of the source of the infection from which the whole body is suffering.

Salicylates.—Robert Liegel¹² contributes a remarkable paper in which he describes a treatment which has been successful in his hands in seventy-two consecutive cases of croupous pneumonia occurring in the miners at Leoben-Seegraben. The patients ranged from sixteen years of age to seventy-four, and included many subjects of anthracosis. Eight had pulmonary emphysema; six cardiac disease. A large proportion were alcoholics. The drug relied upon was sodium salicylate in "large doses," not less than 120 grs. daily. This was given in solution. No other medicine was employed, except perhaps an expectorant containing ipecac, if the cough was tight and racking, and small doses of morphin when pain was excessive. Ice was applied to the head when the temperature was above 39.5° C. (103° F.)

Under this treatment not only did recovery take place in every case, but the duration of the attack was diminished one-half. In no case did crisis occur. The temperature declined from the end of the first day, until at the end of three or four days it reached the normal, and convalescence was established. The expectoration lost its distinctive character and became catarrhal, the physical signs did not fully develop, or if present speedily retrogressed. The microscopical examination of the sputa showed a constantly diminishing number of diplococci, until, at the end of the third or fourth day, they were found to have entirely disappeared.

In the earlier cases the medicine was suspended as soon as the temperature became normal, but this was found in a number of instances to be followed by relapse; observing this, the doses thereafter were continued for some two or three days longer, and no further relapse occurred.

Previous to the adoption of this treatment the management of the disease by the usual methods had been unsatisfactory and the mortality excessive.

Liegel does not grasp the anti-bacterial idea but considers that the salicylate exerts a specific effect, such as it exhibits in rheumatic fever. He, however, assumes that it acts on the mucous membrane, increasing its secretion and thereby throwing off the exudate, as croupous membrane is thrown off from the larynx. In no instance did it give rise to any symptoms more unpleasant than a buzzing in the ears. Indeed, the dosage was fairly moderate, less than we habitually employ in the early stages of acute rheumatism, and anything like poisonous effects could scarcely be apprehended.

Liegel believes that this treatment will save nearly all cases, and he cites some instances to show that the most unfavorable conditions may be recovered from under its use. In one of these a man sixty-seven years of age was taken with pneumonia while living in a damp cellar in which six persons were huddled together. He had been insufficiently nourished before the attack, and when first visited was found delirious and too much prostrated to be removed to the hospital. He recovered, however, in the same time as the others, notwithstanding his miserable surroundings.

This is the latest and most important illustration of the possibility of so acting upon the blood as to hinder the growth of the bacteria, and to diminish, if not prevent, the formation of toxin.

The following is from a private letter to me, from Dr. A. Ross Matheson, of Brooklyn. The substitution of the ammonium salicylate for the sodium salt has much to recommend it, but the latter has seemed to me to be better borne by the stomach:

"For several years I have used the salicylate of ammonium in pneumonia, more especially in those cases occurring during the grip season and in which there was a grip element more or less pronounced. I am now treating a case of lobar pneumonia in the third stage in which the only remedies administered have been salicylate of ammonia, codein sulphate, and strychnin sulphate. The symptoms in this case in the beginning were formidable in the extreme, but modified early as a result, I believe, of the effects of the ammonium salicylate. I administer it in ten to fifteen grain doses, and endeavor to have the patient take from one and a half to two drams in twenty-four hours.

"I find that ammonium salicylate has some advantages over the soda salt. It is stimulating, while the latter is more or less depressing, and it does not produce to the same extent the throat and ear disturbances. I am satisfied that it has decided value."

Dr. J. H. Ferguson, of Mine La Motte, Mo., informs me that he has records of one hundred and six cases of pneumonia treated by him with sodium salicylate, showing one hundred recoveries and six deaths. He was led to this method by the belief that inflammation in general was intensified by uricacidemia. He gives five grains every two hours, together with potassium citrate, to stimulate the kidneys.

In concluding the argument for a treatment addressed to the bacteria themselves, I will say a word as to the time at which such treatment is to be instituted. Emphatically at the earliest possible moment. If we had the patient constantly under our eye and began treatment the instant we even suspected that pneumonia *might* be impending, we should even then, as I believe, often find that the diplococcus had already effected a lodgment and the local process was already under way. The occurrence of the chill is a certain indication that a considerable amount of toxin has been formed in the lung and taken into the general circulation. Every hour fills up more air-cells with the exudate and shuts them off from communication with the functional circulation upon which we are to depend to carry our remedial agent to the field of its activity. In every cell so shut off the germ culture will go on until arrested by exhaustion of the medium or other natural processes which it would carry us too far to discuss.

But even if we miss the auspicious moment, so long as the disease is spreading we shall still be in time so to act upon the zone just outside of the consolidated area. And it is precisely here that the most active mischief will always be going on. It is the young, newly formed cocci that are virulent, the older ones in the centre of the focus are relatively harmless. This has been proved by laboratory cultures. And it is the half-filled cells in whose walls the functional blood is still flowing that afford the best chance for absorption of the toxin. There is, therefore, no moment while the local disease is advancing when we may not expect to lessen in some degrees the flood of toxin being poured into the general circulation.

As long, therefore, as persistent temperature and pulse frequency show continued formation of toxin, so long effort to combat this formation is demanded. The earlier instituted the better, but it is never too late to begin.

In my view it is the duty of the family physician to provide his families with either creosotal or one of the salicylates, and to instruct them that with the slightest chilly sensation or the slightest stabbing pain in the lung a dose is to be given at once and that this dose is to be repeated at stated intervals

until the physician arrives. This might prevent the development of pneumonia in some cases and shorten the attack in others.

My individual experience with the line of treatment in question, though not large has been encouraging. The cases coming under my observation are for the most part in an advanced stage of the disease, and often in a well-nigh hopeless condition. Yet even in such cases I have seen, or thought I saw, marked benefit from the antigermic means employed. I have been searching for the best weapon against the pneumococcus. I have used all of those I have mentioned this evening, with the exception of large doses of quinin, which have seemed to me too slow in action and too disturbing to the stomach. At one time the salicylates were my preference, but I think that late in the disease they may be depressing to the heart, and they often cause a good deal of gastric irritation. I now prefer carbonate of creosote. In my hands it has done good service, and the testimony of many authorities, as we have seen, is strongly in its favor. So far no inconvenience seems to have resulted from its use.

As to accessory treatment, I shall say but little. It comprises, first, stimulation of the emunctories to carry off the poison as it forms; second, sustaining the vital powers and particularly the heart-cardiac stimulants, hydrotherapy; third, relieving the pulmonary circulation—vasodilators, venesection; fourth, compensation for loss of respiratory surface—inhalations of oxygen; fifth, reduction of excessive temperature—cold to surface, antipyretics (?); sixth, relief of incidental symptoms.

There is only one point under this head that I care to insist on at this time. When the chief danger to life is mechanical, *i.e.*, from obstruction to respiration, and there are cyanosis and distention of the veins, and frequent, rattling respiration, I would give arterial dilators, and I would not give digitalis. In my experience blueness and digitalis go hand in hand. If we can keep our patient's face florid we may have hope for him; but blue lips and ashen cheeks are the shadow of death. If we can retain a portion of the blood in the arteries instead of driving it all into the veins, the right heart will thank us, and we need not apologize to our sphygmograph for neglecting its warning. I infinitely prefer a big pulse, however soft and gaseous, to a tiny thread that the finger can scarcely discover. As to the pulse *under these conditions* becoming slower and fuller from the effects of digitalis, it is a phenomenon I have never witnessed. And this leads me to devote a moment to the treatment advocated by Petrescu of Bucharest which he claims saves all but two per cent. of his cases, and to which the friends of digi-

talismans so confidently appeal. His statistics are good, but all his patients are young soldiers, picked men, who have passed a rigid physical examination. He has them constantly under his eye, and at the first sign of illness they are taken into the hospital and placed under treatment. But if his patients included both sexes and all ages, if he had to deal with a full proportion of alcoholics and nephritics and diabetics and cardiac incompetents, with half-starved beggars, and gouty dyspeptics, and if they were trundled from a distance to the hospital at no matter what stage of the disease, and with no matter what previous treatment, his ratio of cures would be considerably different. Moreover, the watery effusion of digitalis which he employs does not represent the drug, as it contains almost no digitalin but depends for its efficacy upon digitalein and digitonin. Indeed I would hazard the conjecture that the enormous doses of this preparation administered by Petrescu do quite as much by poisoning the pneumococcus as by acting on the heart and arteries.

The serum treatment of pneumonia from which so much has been expected, has not yet yielded any definite results. Still there is enough to encourage further effort, and it may be that in the near future an important addition to our resources will be attained, and that we shall have an antitoxin as efficacious in pneumonia as is the one we now have in diphtheria.

In the discussion of this subject I have for lack of time purposely omitted many interesting points in pathology which have not a direct bearing upon treatment. My wish has been to fix attention upon the point at which the pathology and the treatment of pneumonia come into touch one with the other. If this point can be made to broaden into the basis of a rational therapeutics my aim will have been accomplished.

18 EAST FORTY-SIXTH STREET.

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Dr. Markoe Appointed on Staff of New York Hospital.—Dr. Francis H. Markoe has been appointed visiting surgeon to the New York Hospital.

THE EXPLORATION OF THE ABDOMEN AS AN ADJUNCT TO EVERY CELIOTOMY.

By HOWARD A. KELLY, M.D.,
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I HAD occasion in several instances some sixteen years ago, to make post-mortem examinations and to remove through an opening in the vaginal vault in women, and through the perineum and through the rectum in men various viscera which I was desirous of inspecting.¹ I was enabled in this way to secure specimens not only from any part of the abdominal cavity, but by perforating the diaphragm, from the thorax as well, removing in one instance both heart and lungs. I recall with particular distinctness my first case, a woman with large white kidneys whose history I had followed with unusual interest, and where I had reason to feel assured I would be refused the privilege of an autopsy by the unintelligent relatives, abetted by the undertaker. I was in this instance able to remove both kidneys through the vault of the vagina without leaving any external evidence whatever of the depredation committed.

I cite these cases, not without considerable misgivings as to the propriety of my conduct in thus stealing an autopsy, in order to show how easy it is to reach all the various viscera through an incision as far as possible from the center of the abdomen, large enough to admit the forearm, as well as to urge the propriety, or rather the necessity of making a somewhat analogous investigation of all the abdominal viscera every time the abdomen is opened in the living subject.

Although I had not infrequently made such examinations from the earliest years of my work, in common I suppose with other surgeons I was led to adopt the investigation of the abdominal and pelvic organs as a routine plan to be followed in all celiotomies by the following circumstance which caused me no little chagrin. I was treating a woman for pelvic peritonitis with adhesions binding down both tubes and ovaries; I first broke up the adhesions under anesthesia, and then, finding that she continued unrelieved, in December, 1894, I opened the abdomen, brought the adherent tubes and ovaries up out of the incision, carefully freed all adhesions and returned the now fairly normal organs, and finished by suspending the retroflexed uterus.

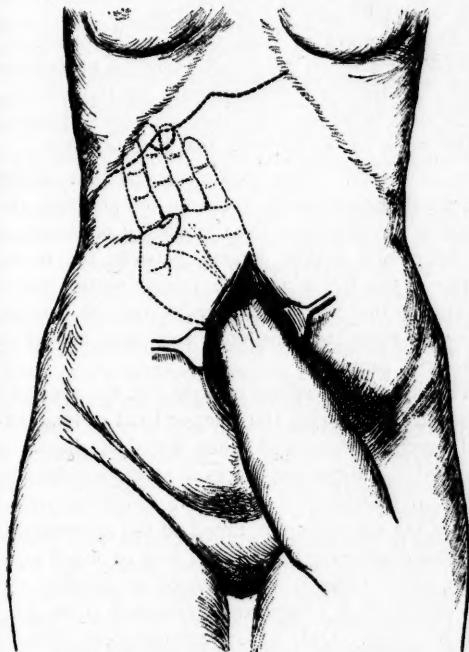
She passed entirely out of my hands and I did not hear from her again further than to realize that the success of my work was but a qualified one, until a

¹ A method of post-mortem examination of the thoracic and abdominal viscera through vagina, perineum and rectum, without incision of the abdominal parietes.—MEDICAL NEWS, June 30, 1883.

number of months had elapsed, when she wrote from a distant point saying that she had undergone an operation for chronic appendicitis by which she had been entirely relieved, and that she was convinced that this had been the real cause of all her discomforts as well as of the pelvic inflammation which I had been treating.

Whether the reproach was deserved in this case I have had no means since then of deciding, but I acted upon the assumption that I was blamable for neglect and took the lesson to heart, and have ever since that date inspected the vermiform appendix in every instance in which I have made an abdominal

FIG. 1.



Method of exploring the abdominal viscera.

incision large enough to permit such an examination, and have recorded its condition in writing on a slip kept by the anesthetizer during the operation; furthermore, realizing that not only the appendix might be at fault but some other abdominal viscus as well, I have made a systematic examination of the entire peritoneal cavity in every instance in which the condition of the patient did not forbid it.

It will, I am sure, be easy for any surgeon to whom this proposition is presented for the first time, upon pausing to consider the matter to adduce shortly a number of excellent reasons why such a practice should sometimes prove serviceable; let us consider some of them.

In the first place, abdominal diseases of all kinds are commonest in middle life, the period when most of our celiotomies are performed and it becomes practically certain, reasoning simply from the law of chances, that a coincidence of two or more entirely independent diseases is sure by means of this examination to be discovered occasionally.

In the second place, there is a constant association between certain abdominal surgical affections and affections elsewhere in the form of a mutual interdependence, whether from the propagation of a disease from a central point, as in the case of cancer, sarcoma and tuberculosis, or from a mechanical action, where the effects of pressure are manifested near to or at a distance from the seat of the disease, as in the case of pelvic tumors or inflammation obstructing the vascular, the urinary or the alimentary channels.

In the third place, such an examination if negative gives both operator and patient a comfortable assurance that the convalescence will progress without interruption, as well as the satisfaction of realizing that there is no visceral affection in progress which is liable in the near future to shorten life or to impair health.

The following diseases are most likely to be found in such a routine examination: appendicitis, hernia, either inguinal, femoral, or umbilical, hydro-ureter, disease of the omentum, pyloric cancer, movable kidney, enteroptosis, cancer of the liver, perihepatitis, gall-stones.

In making an investigation, or rather in taking an inventory of the abdominal cavity in this way, certain of the organs can be inspected as well as handled, while others can only be felt. The range of vision is limited to the area adjacent to the incision and those structures which can be drawn over into the neighborhood of the incision; the field is of course extended by enlarging the incision. In a lax or scaphoid abdomen where the reserve space is large, the abdominal walls may sometimes be hooked up well away from the viscera, which can be seen by stooping down and looking in or by inserting one of my largest calibre rectal specula and using a headlight. This extension of the field of inspection is also often feasible after removing a large ovarian or a large fibroid tumor.

There are four steps in the exploration of the abdomen:

First, the simple inspection of such structures as can be seen in the neighborhood of the incision by drawing the lips of the incision widely apart.

Second, the examination of those structures which can be brought into view by inserting two fingers through a small incision and catching structures near

by, such as ovaries, tubes, cecum and appendix, as well as uterus.

Third, by the insertion of the hand as far as the wrist, by which the colon and the stomach and the pylorus can be grasped and palpated or pulled down, and

Fourth, by the insertion of the forearm in order to reach the liver, the gall-bladder, the kidneys and the spleen.

The technique of such an exploration is this: extreme care must be taken to maintain asepsis by thoroughly sterilizing the arm or by wearing a rubber glove with a long sleeve reaching as far as the elbow, which I have had made for this particular purpose. (See fig. 2.) If the field of the operation, that is to say the area in the immediate neighborhood of the incision, is so septic as to demand the use of drainage, then the operator would best forego the advantage of the more extended examina-

FIG. 2.



Rubber gauntlet.

tion on account of the risk of distributing the septic material.

The length of incision necessary for a complete exploration of the abdomen must vary from ten or twelve centimeters up to fifteen (6 to 9 inches) according to the size of the operator's forearm; it must be so large that he runs no risk of bruising the tissues by forcing in the arm through a tight opening.

The best posture in which to examine the patient is either lying flat on the table, or with the pelvis slightly elevated; a decided elevation often causes the appendix to gravitate up out of reach for inspection unless one uses dangerous traction on the cecum to bring it down.

The various structures are examined in an order which must vary with the location of the incision; when the abdominal opening is made low down over the middle of the pelvis, I commonly follow some such routine as this; after carefully noting the condition of each pelvic viscus, uterus, tubes, ovaries, bladder and rectum, I then look at the internal inguinal rings, locating them if necessary by the round ligaments, and test them with the index finger to see if

there exists a hernia, and if so I proceed to sew it up at once from the inside of the abdomen, first passing the needle through the outer pillar of the ring and then through the inner, using one or two mattress sutures of silk; another row of sutures draws the peritoneum over the first line so as to bury them; in this way the hernia is closed from the inside, the side on which the pressure falls first and, therefore, in the position of the greatest mechanical advantage.

The umbilical ring is next examined, and if there is an opening it must be closed in like manner from the inside with one or two mattress sutures. The bladder is then examined for adhesions, which are often found on its peritoneal surface. The rectum also will often be found involved in a pelvic peritonitis, especially near the pelvic floor.

The next point of importance is the vermiform appendix, for which the pelvis ought not be elevated at all. Unless the abdominal walls are thin, the incision must be larger than that used for suspension of the uterus by my method, that is to say over 4 or 5 cm. in length. The cecum can be best caught and drawn into a small incision by grasping the bowel in the right iliac fossa by the last phalanges of the index and middle fingers, between the dorsal surface of the index and the palmar surface of the middle; in this way the appendix can be brought into view when the incision is only large enough to admit two fingers.

The cecum secured and brought out, the appendix is traced by following the anterior band of longitudinal muscular fibers, and when found it should be removed if it shows any traces of previous inflammation. In a series of 115 cases in which the condition of the appendix was noted at the operation, it was found adhering to the right tube or ovary in 10 cases, in 37 cases it was involved in adhesions, it was congested in 3 cases, and obliterated at the cecal end in 1 case. Only 64 appendices were perfectly normal.

In a series of 200 abdominal sections I have had occasion to remove the appendix 25 times.

The routine inspection of the ureters in gynecological operations is perhaps as important as that of any other abdominal organ after the appendix, and for this reason every surgeon should be thoroughly familiar with the ureteral landmarks. The best place to find the ureters is where they lie upon the common iliac arteries at the pelvic brim; on the right side the ureter may be seen, upon lifting up the inner border of the cecum, crossing the brim with the ovarian vessels. If watched for a little while a peristaltic wavelet, at once establishing its identity beyond a doubt, will be seen traveling down toward the bladder. On the left side it is necessary to

draw the sigmoid flexure in the same direction, that is to say, toward the median line, in order to affect a similar exposure. In cases of carcinoma and myoma uteri and ovarian cysts such an examination will often reveal the presence of a hydro-ureter, in suppurative pelvic affections a pyo-ureter may be found.

A case which I operated on in Paterson, New Jersey, at the request of Dr. J. C. McCoy, serves beautifully to illustrate the point I wish to make here. The patient had a fibroid uterus reaching as high as the umbilicus, and altogether about as large as a six-months' pregnancy. I removed it by my method of supravaginal amputation, cutting from left to right. I then examined the adjacent structures and found the appendix bound down by adhesions in the pelvis and removed it. Then after stating to a number of gentlemen who were present, the importance of examining the ureters also in such cases, I proceeded to investigate carefully and found on the right side an extensive pyo-ureter leading up to a pyonephrosis, whose presence there had been no clinical reason whatever to suspect.

I accounted for the pyonephrosis in the following manner: the myomatous uterus which filled the pelvis had backed up the urine by pressure at the brim causing a hydro-ureter and a hydronephrosis, then came the appendicitis adding the element of infection conveyed through the tip of the appendix which I found firmly soldered down in the pelvis upon the ureter about 4 cm. below the brim of the pelvis.

Dr. McCoy at a later date removed the right kidney, completely curing the patient. By making a routine examination of and discovering the complication at the first operation, I saved myself the possible, and I think proper, imputation of having ligated the ureter, and so of having caused the pyelonephrosis, I furthermore made an accurate diagnosis as to the presence and location of the complication and determined that the opposite side was unaffected, so making the subsequent operation a safe instead of a hazardous undertaking.

The position of the transverse colon and the stomach are to be noted on account of the frequency of enteroptosis.

Up to this point it has only been necessary to introduce the hand as far as the wrist, it now becomes necessary to introduce the forearm, and for this purpose the edges of the incision are protected with gauze, and the omentum held down while the hand is pushed in, in front of it, with fingers extended and thumb pressed into the palm so as to take up less space. Whichever hand the operator uses he should stand on the corresponding side of the patient and push the hand first back into one flank and then into the other and thus palpate both the kidneys,

noting their presence, size, form, and mobility by sliding them up and down. The renal pelvis may be felt and inverted towards the calices to detect a stone. After the kidneys, the liver is felt, its apparent size, the regularity of its surface, its margin, any adhesions which when present indicate perihepatitis. Most of all, the superior viscera the gall-bladder is next located by feeling the fissure between the right and left lobes of the liver and then palpating across the lobus quadratus to the depression on its right side where the gall-bladder is found, as a rule, well distended.

By taking it between the thumb and two fingers and squeezing it with moderate force, a healthy gall-bladder collapses slowly as the bile is forced out into the hepatic and common ducts. Not infrequently on recovering from the anesthetic such a patient vomits at once a quantity of golden-yellow bile. When the gall-bladder is collapsed one can then readily feel a stone if it be present, by pressing its walls together.

I next put my index-finger in the foramen of Winslow, easily found below the gall-bladder, and palpate the hepaticoduodenal ligament and trace the common duct down for several centimeters, feeling for a stone there. The spleen may then be felt, taking the stomach as a guide.

Finally the pancreas is found by carrying the hand in under the omentum and palpating through the transverse mesocolon.

The aorta may be palpated throughout the entire length of its abdominal portion by pressing the fingers back against the vertebral column as the hand is withdrawn.

In a case of Dr. G. P. Yost's, in which a patient convalescent from typhoid fever was suddenly seized with severe pains, marked elevation of temperature, and had a decided distention of the abdomen, there was reason to suspect an attack of acute appendicitis or perforation of the intestine. In this instance I made an incision just inside the anterior superior spine of the ilium, and finding the bowel and appendix normal but the peritoneum everywhere in a state of subacute inflammation, and the abdominal cavity full of a dark thickish fluid, I explored the rest of the abdomen through the incision and was rewarded by finding a gall-stone in the bladder. A close examination of the fluid showed that it was probably bile, and the diagnosis of ruptured gall-bladder following typhoid fever was therefore made and the abdomen opened above, the stone removed and the gall-bladder drained and the patient recovered.

In another instance in which the patient located her pains under the liver and there was every rea-

son to suspect the presence of gall-stones, upon finding none I palpated all of the abdominal viscera through the incision made in the linea semilunaris just below the ribs and found far down on the pelvic floor a large hematoma of the left ovary which was at once removed by a suprapubic incision.

I shall not pause to cite cases in which isolated carcinomatous nodules have been found upon carefully searching through the omentum, or enlarged mesenteric glands in peritoneal tuberculosis; or in other cases in which a carcinomatous infiltration has been discovered in the pylorus or nodules in the liver, in each instance materially affecting the prognosis as to complete recovery.

In cases liable to metastasis, such as those just cited, it is my practice to reverse the order of the investigation wherever possible, making the exploration of the abdominal viscera first and then doing the operation. If I find a metastasis which is out of the reach of surgery, I would not then feel justified in taking the same risks in removing say an advanced carcinoma in the pelvis.

In conclusion let me recapitulate and restate the points I desire to emphasize presenting them from a slightly different standpoint.

The important lesson I wish to inculcate is that, provided an incision has been made in the abdominal parietes large enough to admit the entire hand and therefore the forearm, it is always an advantage to the patient to be able to assure him that as far as touch could ascertain there is no disease of any other abdominal organ.

Under some circumstances where there is reason to suspect disease of one of the other viscera not in the proximity of the field of operation, I would make a larger incision than necessary for the performance of the operation for the very purpose of making such an exploration.

There are in general three classes of cases to which this extended examination may be applied:

Firstly, those in which there has been no reason to anticipate any disease of any other organ and the examination is made simply as a routine procedure, whenever it adds nothing to the gravity of the situation. In such cases we are most liable to find unsuspected hydro-ureter, appendicitis, movable kidney, gall-stones, and occasionally pyloric tumor.

Secondly, those cases in which on opening the abdomen, contrary to expectation no disease is found near at hand. The operator may then find it of great advantage to enlarge the incision, introduce the hand and the forearm and explore the entire abdomen. I have cited a case of this sort in which I made an incision over the appendix and finding no appendicitis, enlarged the opening and found a gall-

stone within a ruptured gall-bladder; also, another case in which gall-stones were believed to be present, but in finding the diagnosis at fault I introduced my arm through the enlarged incision and found a large hematoma of the ovary.

Thirdly, the group of cases in which there is a definite percentage of chances that the disease discovered at the time of operation is complicated by the affection of some other organ neighboring or remote. In cancer of the ovary I examine all the organs and in no small percentage of cases have the disappointment of finding metastases in the omentum pylorus, or liver. In pelvic inflammatory disease the appendix will be frequently found involved, and in the case of pelvic tumors as well as inflammation the ureters are prone to suffer from compression.

NEURASTHENIA; ITS SYMPTOMS AND TREATMENT.

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NEURASTHENIA is best described by its English synonym, nervous prostration. Just as many functions as there are of the nervous system, just so many functions may you have depressed. The attempt has been made to differentiate a spinal and a cerebral form, but this is almost impossible, although there may be a predominance of either cerebral or spinal symptoms. The various functions of the mind are performed imperfectly, and there is a lessened capacity for mental work in all its myriad forms, whilst the lower and less conscious functions of the spinal cord also suffer. The symptoms, however, are rather those of impairment of function than of perversion. For instance, thought is correct, but cannot be sustained as long as in health; attention can be given, but not equally well; the memory does not suffer; the mood is but slightly altered, except by occasionally brooding on the illness there being no hallucinations, delusions, or illusions; this slight alteration of the mood differing radically from the profound melancholy of melancholia, with its delusions and suicidal impulses, or the feverish excitement of mania, or the fixed delusions of persecution and self-exaltation of paranoia, or the glittering perversions of the senses in hallucinatory insanity, or the stupid delusions of grandeur of general paresis. A neurasthenic may be nervous, or, if one chooses to call it so, hysterical, but only as a result of the neurasthenia. The worn or haggard countenance and the inability to support fatigue are seen by the competent eye to be due to nervous weakness and not to *nervousness*, although the nervous weakness may in its turn produce nervousness—a fine yet very important distinction.

Neurasthenia may be caused by over-work, mental or physical, or by great emotions; by such diseases as typhoid or other fevers, influenza, indigestion, nephritis, diabetes, syphilis, tuberculosis, rheumatism, gout, anemia, lead, hysteria, palmus, or chorea; by intestinal, cardiac, nasopharyngeal, genital, or pulmonary lesions; by such vicious habits as masturbation, or the use of alcohol, cocain, morphin, absinthe, tobacco, tea, and coffee; and occasionally even by errors of refraction. At first sight it would seem as if this were a very formidable list of causes to remember in examining a case; but practically it is very easy. It should be the rule to make a urinary examination, and thereby determine the presence or absence of albumin or sugar. It must be distinctly borne in mind that small quantities of albumin or sugar, or both, or a few hyalin casts, are not evidence of renal disease but may be simply indicative of neurasthenic conditions; so that a nephritis must be sought for by means of a suspicious persistent specific gravity and continuous hyalin, granular, epithelial, or fatty casts, or by the evidence of arterial or cardiac alteration in conjunction with these. Contrary to the general belief, uric acid may be disregarded in its relation to neurasthenia. The older theory of Murchison has been discarded, and instead of regarding uric acid as a product of suboxidation, it is now known to have its origin in the nuclein of cells, not of those composing the fixed tissues of the body, except to a very slight degree, but of the food-cells and the motile body-cells, and whether it is excessive in amount is a matter of very delicate chemical examination. This matter is of very little importance clinically for the theories of Haig are accepted by few chemists. Nevertheless, there is a condition answering to what we call lithemia, more largely to be diagnosed by the symptoms than by the chemistry, however obscure the pathology and treatment may be. Having examined the urine, the heart should be investigated, and the history will decide whether it is necessary to examine any other viscus, or whether the patient has suffered from any other of the possible causes. A sharp distinction, however, must always be made between cause and effect, and it must be remembered that while a cause may be removed, the effect may yet continue. Simple as this proposition seems, it is very seldom that the physician obtains an adequate mental concept of it. To illustrate: suppose I light a match and set fire to a piece of paper. The lighted match is the cause and the burning paper is the effect. Now, I blow out the match and remove the cause, and yet the effect, the burning paper, continues and has to be itself treated. In this way these different causes which have been enumerated

may set up neurasthenia, and yet when they are removed, the neurasthenia, the effect, will persist and will have to be treated—indeed, in many cases the cause and the effect will have to be treated together.

Neurasthenia must be differentiated from melancholia, hysteria, general paresis, bromism, locomotor ataxia in its early stage, and hypochondria.

Melancholia is characterized by obstinate insomnia, by some curious sensations, as a pressure, a creeping ache up or down or actual pain in the back of the head and neck, sometimes running far down the spine; and sometimes as far up as the vertex of the skull; by a characteristically melancholic *facies*, nervous and melancholy agitation, or absolute silence, with or without cataleptic symptoms. None of these symptom-groups are present in neurasthenia.

The hysteric may have a hemianesthesia, *i. e.*, an impaired sensation of pain, touch, hearing, smell, or taste on one side of the body, or a paralysis involving only one limb (monoplegia), or hysterical convulsions—symptoms never observed in neurasthenia. In cases of hysteria of a less marked type there is no real physical depression, but immediate response to some suggestion or some placebo in the way of treatment. In both hysteria and neurasthenia there may be a tremor which, in the hysteric may be overcome by suggestion, but which is much slower to improve in the neurasthenic.

In general paresis there is a marked stupidity, either occasionally or continuously, a tremor of the tongue and facial muscles, lost or unequal knee-jerks, unequal pupils, and occasional days when the patient is flushed, has a staggering gait, and is more stupid, and has stupid delusions, generally of some exalted type. No case of neurasthenia ever has these symptoms.

Bromism is usually detected by the stupidity, peculiar fetid breath and the widely dilated pupils.

The early stage of locomotor ataxia will have lost knee-jerks, lightning-like or stabbing pains, seldom repeated in the the same place, and usually severe in character; and with these is often associated some difficulty in micturition or there may be distinct incoordination.

The hypochondriac is manifestly an exaggerator and his symptoms are palpably unreal.

The prognosis of neurasthenia is usually excellent provided the cause is removable. For this reason the favorable forms are those which are caused by over-work, mental or physical, by great emotions, or by influenza, the exhaustive fevers, indigestion, anemia, and hysteria. The prognosis of the nephritic, intestinal, cardiac, nasopharyngeal and pulmonary cases will depend entirely upon the degree and fixity of the lesions. Those proceeding from

syphilis usually respond very well to treatment, and the rheumatic and gouty forms are generally of good outlook. The choreic variety is extremely treatable, whilst that from palmus is of variable prognosis, some cases replying readily, and others not. The forms resulting from vicious habits are perfectly treatable if patients can be controlled in their vices.

The treatment consists of: (1) removal or amelioration of the cause; (2) rest; (3) suitable physical and mental tonics, and (4) electricity. Simple as this enumeration is, however, the daily application of the principles from person to person is difficult, and it is made doubly so because a prolonged nervous depression diminishes the good sense and increases the bad judgment and lack of self-control.

The cause should, of course, be removed or ameliorated, if this can be done without aggravation of the neurasthenia. It is often a matter of extremely nice judgment to determine how much a patient can endure in the removal of the cause; for example, if the neurasthenia be profound, a dangerous operation should be deferred until the strength is greater. Rest should be both mental and physical, and its degree must be proportioned to the needs of the individual, so that little is given in a very mild case, whilst a severe one has absolute repose in bed. The recognition by Dr. Weir Mitchell of rest as the key-note of treatment in these cases was a stroke of genius, but the rough and ready application of it, since the popularization of the idea with the profession and laity, has often been appalling. It is seldom necessary to put patients to bed for three to six weeks, as was at first proposed. As a rule, it will suffice to keep them there ten or twelve hours out of the twenty-four, and to have them avoid fatigue when they are up.

The tonics to be used will vary somewhat. If there is anemia, iron should be employed, but if the neurasthenia is severe and the anemia profound, iron alone will not begin to do the work. In such a case, it will be found that dialysed iron 3 i to 3 ss three times a day, after meals, in a full tumbler of water, will be the best form, or, if the stomach is in any way susceptible, a peptomanganate of iron, a dessertspoonful three times a day, after meals, in a wineglass of milk. But with these should be combined tonic doses of sulphate of quinin, 2 to 3 grains, three or four times in the twenty-four hours, provided the patient has no idiosyncrasy about the drug. In some cases it will even be well to combine sulphate of strychnin with the iron and quinin, and in such circumstances the following prescription may be employed:

R Strych. sulph. gr. $\frac{1}{10}$
 Ferri sulph. gr. ii.
 Quin. sulph. gr. ii.
 Ft. in pil. (argente) seu capsul. No. I. Mitte XV.

M. S. Three times daily one hour and a half after meals.

With these tonics, in severe cases, must be given a large amount of beef, and, inasmuch as anemics are, with a curious contrariety of nature, often extremely averse to taking it in the solid form, beef-tea should be employed.¹ No profound case of anemic neurasthenia will be relieved entirely without the iron, the quinin, possibly the strychnin and the overfeeding with nitrogenized matter, besides which these anemics need an unusual amount of fresh air, probably because of the deficiency in hemoglobin. A moderate degree of anemia, however, will not require this proportion of nitrogenized food, nor the large amount of iron, and it may even be hurt by the quinin, and in such cases it will be found well to employ ferratin and strychnin, in the following prescription:—

R Ferratin gr. iii.
 Strych. sulph. gr. $\frac{1}{10}$
 Ft. in capsul. No. I. Mitte XV.

S. One three times a day just after meals.

If the patient is not anemic, the tonics that should be used will depend largely on the degree of the neurasthenia and the idiosyncrasy of the patient. If it is a mild case, an elixir of calisaya may be employed, a dessertspoonful before or after meals as may seem best. Some, however, cannot tolerate this, and then it will be found well to give arsenic, either 3 drops of Fowler's solution, three times a day just after meals, in a full wineglass of water, or a tablet triturate of arsenious acid, $\frac{1}{10}$ of a grain, three times a day just after meals. Usually, however, the best tonic in the non-anemic cases is the sulphate of strychnin, in beginning doses of $\frac{1}{10}$ of a grain, three times a day, and increasing to $\frac{3}{10}$ of a grain. But where the patients have been put to bed or made to rest a great deal it is better to reserve this until they are beginning to get about more, although, in the case of business men who

¹ The best preparation of this is one made according to an old formula that extracts the albumen from the meat fiber, instead of, as in the usual method, leaving it behind in the stock that is thrown away, and giving the patient only the salts of the blood. Chop up fine one pound of good beef, preferably the tenderloin, put it into a bottle with one pint of water, and add 5 drops of the stronger muriatic acid, taking care to use a dropper so as not to burn the fingers. Then cork the bottle tightly, and put it upon ice for 12 hours. Then lay it, still tightly stoppered, sideways in a pan of water, so that the latter shall cover it. Put it on the back of the range for two hours, and keep the water at a temperature of about 112° F. Any apothecary's shop will supply a cheap thermometer which need be only approximately correct. Then strain the beef-tea through a piece of cheese-cloth, and the result will be a thick, curdly mass, rich in albumen, about three cupfuls in quantity. Before being given to the patient, it should be seasoned and cooked just as any soup is, and a cupful should be given three times a day, at or between meals.

are simply made to expend less energy in their affairs, the drug should be employed from the first.

In cases with a gouty history, the use of colchicum is necessary, and often will be surprisingly beneficial, either in the ordinary doses continued for several days, or, in slighter cases, 20 drops of the tincture of the root at bedtime.

The treatment of the lithemic cases has been a grave puzzle from the fact that the pathology is so imperfectly understood. When there can be no doubt, however, that the seeming lithemic trouble does not arise from indigestion or constipation, the lithiated waters should, as a rule, be employed in abundance, or Vichy, or Giesshuebler, giving from four to six glasses of each in the twenty-four hours. Some have found the glycerophosphate of lime, recently advocated in France, of great use in some of these cases given in doses of from 5 to 10 grains, three times a day. If any of the various forms of indigestion are associated they can usually be handled by the simple general plan of treatment of the neurasthenia, modified only to this degree, that the patient shall at the outset be put to bed absolutely for a month or six weeks, and that Mitchell's plan of beginning the dietetics with milk shall be adopted, viz., for the first twenty-four hours $\frac{3}{4}$ ii of milk every two hours, to be increased the second day to $\frac{3}{4}$ iv, and so on until two quarts are taken in the twenty-four hours, the following day a light breakfast should be added, the second day a light noon-day meal, the third, a light supper, so that at the end of two weeks the patient takes two quarts of milk and three full hearty meals in the twenty-four hours. With the simpler cases it will suffice to give the essence of pepsine, one teaspoonful immediately after meals, and a teaspoonful of the diastasic essence of pancreas one hour after; later it may be necessary to add a bitter tonic.

Of course the treatment just outlined is adapted to the functional indigestions only, and great care must be taken to exclude any organic trouble. In neurasthenia there is no true insomnia requiring hypnotics, and when there is any symptom of this kind not to be overcome by the general treatment, the case is probably one of melancholia, as a careful analysis will show.

Mental diversion is highly important, so far as it is otherwise consistent with the proper treatment of the case, but no more cruel mistake has ever been made in medicine than that of driving exhausted neurasthenics into amusements which they are not only too wretched to enjoy, but which actually aggravate their symptoms, for it should always be fully realized that fatigue must be avoided as if it were

a poison. In this connection, it will not be amiss to bear in mind that the organism must be accustomed to do only what it actually can do, and not what the patient thinks, judging from a former condition of health, that he should do.

Electricity is of great value as a therapeutic measure, and the lack of success with it has often been due to lack of precision in the *technique*. Good portable batteries, galvanic and faradic, can now be purchased at very little expense. The former should always have a competent meter and a regulator, or rheostat. The electrodes, or handles, should always be of a good malleable copper, so that they can be bent, having long, strong handles and being covered with absorbent cotton whose edges should be stitched together, back and forth, on the upper side. The skin and electrodes should always be wet with warm water before the electricity is applied, not with salt and water, as this corrodes the metal and roughens the skin. To give a galvanic current through the brain, one electrode, measuring $5 \times 2\frac{1}{2}$ in., should be put on the forehead, another on the nape of the neck, measuring $7 \times 2\frac{1}{2}$ in., and held gently but firmly in place; then the current should be slowly turned on by the regulator until two milliamperes are measured off on the meter, so gently that no flash of light will be perceived by the patient. The sitting should continue at first two minutes, and, later on, five, and then the current should be as gently withdrawn. For the spinal cord the electrode should be placed at the nape of the neck, as first described, and the other, measuring $6 \times 4\frac{1}{4}$ in., across the lower dorsal spine, skin and electrode being wet with warm water as before, and the current, first of five and then of ten milliamperes, should be turned on gently, continued for five or ten minutes, and then as gently withdrawn.

There is no tonic that will be as effective as this electrical treatment, properly and carefully given from day to day. In addition to this, general faradization of the muscles of the body is of great use, but it is not necessary, and should be employed only with patients who are careless of expense and time.

Massage is often a great aid, but not always. There are some people whom it makes worse and in the very severe cases it seems to retard recovery. There is a small minority, however, who are always helped by it. It should never be given for more than fifteen minutes at first, or at night until it has been ascertained that it does not produce insomnia, and frequently it will prove best to defer it until the patient is taken out of bed and craves exercise.

THE BACTERIOLOGY OF TYPHOID FEVER.

By WM. H. PARK, M.D.,¹
OF NEW YORK.

In bringing this subject before the Association I will try to confine my remarks to those points which are of practical importance to the physician. In all characteristic cases of typhoid fever the bacillus, known as the typhoid bacillus, is constantly present in enormous numbers in the tissues of the ulcerated Peyer's patches and in the adjacent mesenteric lymph-nodes. The bacilli are also, after the second week of the disease, usually present, in large numbers in the spleen and in small or moderate numbers in the blood. In pneumonia, periostitis, and abscess formation complicating typhoid fever the typhoid bacillus is frequently found in the diseased areas. The above statements refer chiefly to the characteristic cases of typhoid fever. Research has shown that it is perfectly possible to have infection with the typhoid bacillus without its localization in the intestines, and especially within the Peyer's patches. Even fatal forms occur where there are no noticeable intestinal lesions whatever. In some of these the disease is of the nature of septicemia, in others there is a localization of the process in the pelvis of a kidney, in the gall-bladder, in the periosteum of some bone or in some other tissue of the body. It is important to recognize the occurrence of these irregular cases both from a hygienic and a diagnostic standpoint. Otherwise, for instance, we would overlook cases of typhoid cystitis and allow infection of hands to occur, and we would also have a false opinion of the value of the serum (Widal) test, since we would obtain in some cases the reaction where typhoid infection was present but typical symptoms absent.

The Elimination of the Typhoid Bacillus from the Body.—The typhoid bacillus is fairly constantly present in the feces of typhoid patients. This is not because it grows in the intestinal contents, but because of its being thrown into the intestines from the ulcerated mucous membranes. It remains alive until the intestinal contents are voided. In the feces of some individuals the typhoid bacillus dies in the course of a few hours, while in those of others it remains alive for days and even weeks. In some, indeed, the bacillus actually increases in numbers. These facts explain the great variability in the numbers of typhoid bacilli found in the feces of typhoid-fever patients, and are of importance in connection with the dissemination of the disease and the bacteriological examinations of feces for diagnostic purposes. As to the value of the examinations for pur-

poses of diagnosis the following figures and remarks have been given me by Dr. Hiss from his examination of samples sent into the laboratories of the Department of Health of New York City. Three hundred and twenty-six different cases were investigated by him in the regular diagnostic work of the Department. These 326 cases represent about 400 specimens of feces examined.

Many of these cases were positively not typhoid fever. In others the final clinical diagnosis was doubtful; in others still no diagnosis (final) was ever sent to us.

Cases here recorded as typhoid fever are those represented by a positive clinical diagnosis at the end of the disease, a positive Widal reaction, or the isolation of the specific organisms.

These cases number 121. Of these, typhoid organisms were found in the feces from 42, and were not found in 79. Of the 42 positive cases, a serum reaction was obtained in 27; was absent in the specimens examined in 3; was not tested in 12. Of the 79 negative cases, 73 gave the serum reaction, 2 failed to give it, and 4 cases were not tested. Among these cases were 10 convalescent patients, in which we would expect no organisms, and 7 in which, strange to relate, the stools had been sterilized before being sent to the laboratory.

At least one-half of the remaining cases are represented by specimens sent early in the disease. Many of the serum reactions recorded were only determined late in the disease after several examinations, while in the large majority of cases only one stool was examined, and that one, as already stated, early. Subtracting the 7 cases in which sterilized stools were received, and the 10 convalescent cases, we have 121 minus 17 or 104 cases. Of these 42 were positive (40 per cent.) and 62 negative.

It must also be remembered that many of the specimens were in what seemed to us very bad condition, often having been delayed in transit several days. From the above results we are justified, I believe, in concluding that, from a diagnostic point of view, the Widal reaction will fix the diagnosis as soon as the culture examination. On account of the trouble in obtaining, sending, and examining bacteriologically specimens of feces, it is better to be satisfied with the serum-test unless, it proving negative, the case is of sufficient importance to have a search made for the typhoid bacillus. The specimen, not sterilized, should then be collected in a clean bottle, kept cool and sent quickly to the laboratory.

Typhoid Bacilli in Gall-bladder.—Suppurative cholecystitis has long been recognized as a complication of typhoid fever. It has become now of added interest as a possible source of causing ty-

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phoid infection through the elimination of typhoid bacilli by the feces.

Flexner found in fifty per cent. of fatal cases of typhoid fever pure cultures of typhoid bacilli in the gall-bladder. Cultures have now been made during operations for stone from the gall-bladder of a number of cases months and years after a typhoid infection, and some extraordinary results have been met with. Thus, in cases at the Johns Hopkins Hospital, Miller obtained a culture of typhoid bacillus from a case seven years after recovery from typhoid fever; Cushing from a case where no typhoid had ever been known, and one in which an obscure history of typhoid fever twenty years before was given.

It is probable that in many of these cases the typhoid bacillus does not pass out of the body in the feces, but, on the other hand, in some cases we must believe that it does. Here, as in the case of chronic cystitis following typhoid fever, we allow persons to go about scattering infection which at any time may find conditions suitable for causing an epidemic of typhoid fever.

Typhoid Bacilli in the Urine.—Of even more importance than the consideration of the presence of the bacilli in feces, because less generally recognized, is that of their frequent occurrence in great numbers in the urine. The results of the examinations of the urine by others as well as by ourselves indicate that the typhoid bacilli are not apt to be found in the urine until the beginning of the third week of the fever, or often not until much later. From this time to the period of convalescence they appear in about twenty per cent. of the cases, and usually in pure culture and in enormous numbers. Of 9 positive hospital cases out of 38 examined by Richardson in his first series, 2 died and 7 were discharged. At the time of their discharge their urine was loaded with typhoid bacilli. We have noted many similar cases. In many convalescents the bacilli persist in the urine for weeks. Undoubtedly in some cases they persist for months and years, for Gwyn found them at Johns Hopkins in a case of chronic cystitis following an attack of typhoid which occurred four years before. Cases of cystitis following typhoid should always be suspected to be due to the typhoid bacillus, and the urine should be always disinfected. When we think of the chances such patients have to spread infection as they pass from place to place, voiding urine full of typhoid bacilli, we begin to realize how epidemics can start without apparent cause. The more we investigate the persistence of bacteria in convalescent cases of disease the more difficult the prevention of their dissemination is seen to be. The disinfection of the urine should always be looked after in typhoid fever, and convalescents

should not be allowed to go to places where contamination of the water-supply is possible without at least warning them of the necessity of great care in disinfecting their urine for some weeks. Richardson made the interesting discovery that after washing out the bladder a few times with a weak solution of bichlorid of mercury, 1 to 50,000, the typhoid bacilli no longer appeared in the urine. This treatment carried out by others has frequently succeeded, but also at times has failed. Urotropin internally, 10 grains three times a day, has also given good results in some cases, but even when persisted in this may fail. The bacilli may apparently disappear for a day or two only to reappear later.

How Does Infection with the Typhoid Bacillus Occur?—Not only do the very great majority of cases examined bacteriologically and pathologically, go to show but the epidemiological history of the disease also proves that the chief mode of invasion of the typhoid bacillus is by way of the mouth and stomach. We have already considered the development of the bacillus in the body and the paths by which it is eliminated.

It is also of considerable practical importance to know the duration of life of the typhoid bacillus outside of the body. In feces it lives for a very variable time; sometimes it remains alive but a few hours, usually a few days, often for a number of weeks, and exceptionally for several months. As a rule, the bacilli can be detected in water no longer than fourteen days after introduction. Foote says that they can be found in living oysters for at least a month. The life of the typhoid bacillus varies according to the soil in which it is placed, to the abundance and varieties of the bacteria associated with it, and according to the presence or absence of such injurious influences as high temperature, light, desiccation, etc. All our information indicates that the typhoid bacilli increase largely in the human body, and simply remain alive for a shorter or longer time in the feces or the urine or substances contaminated by them. Exceptionally, as when milk is infected, actual increase of the bacilli outside of the body may occur. The persistence for years in chronic cystitis and cholecystitis following typhoid fever reveals two hidden sources of infection.

The bacilli may reach the mouth by means of fingers infected with urine, or feces, or articles of various kinds, or by the ingestion of infected food, milk, water, etc., or by more obscure ways, such as the contamination of food by flies and other insects, or by the inhalation through the mouth of dust containing typhoid bacilli. Of the greatest importance, however, is the production of infection by contami-

nated drinking water or milk, one or the other of these being the explanation for the majority of epidemics of typhoid fever. In many cases indirect proof of this mode of infection has been found in the known contamination of the water with typhoid feces or urine, and in some few cases it has been confirmed by direct proof in finding the bacilli. Examples of infection from water and milk have come frequently under our direct observation. For instance, a large force of workmen obtained their drinking-water from a well very near to their work; typhoid fever broke out and continued to spread until the well was filled up. Investigation showed that some of the sick, before their discovery, repeatedly infected the soil surrounding the well with their urine and feces. Another instance of milk infection secondary to water infection was that of a milk dealer whose son came home suffering from typhoid fever. The intestinal movements were thrown into a small stream which ran into a pond in which the milk-cans were washed. A very alarming epidemic of typhoid developed, which was confined to the houses and asylums supplied with this milk. In our late war not only water infection, but food infection, was noticeable, as in the case of a regiment where certain companies were badly infected while others nearly escaped. Each company had its separate kitchen and food-supply, and much of the infection could be traced to the food.

Of more unusual origin are the too following examples of ice and shellfish contamination:

In the first epidemic the ice supply seemed to be undoubtedly the cause, as typhoid fever practically only occurred in those houses where the ice was supplied. Those using the same water and milk, but not the ice, as the people infected, were not attacked. It was found that in the winter a case of typhoid fever occurred near the pond and the stools were thrown on the ice. The epidemic occurred in August and the feces were thrown on the ice the previous January.

The epidemic at Exeter of typhoid fever certainly indicates that the eating of shell-fish is a possible cause of typhoid fever. Of eighty-five cases of typhoid fever reported in Exeter in the month of August, fifty-eight of the persons had eaten raw cockles at school picnics on July 11th and 20th at Exmouth. The cockles were taken from a mud bank over which a sewer discharged and this sewer had on its line several cases of enteric fever. Colon bacilli were found in the cockles but no typhoid. This examination was necessarily some weeks after the time that the supposed infection occurred. This and similar epidemics, although they have not been absolutely proved to have been caused by the shell-fish,

teach us the need of supervision if they are to be eaten raw.

Insects as Carriers of Infection.—These are reported by Oelli to become infected with typhoid and excrete the bacilli in their feces. They certainly can transport bacilli on their feet, as we have proved by having flies alight on infected feces and then walk over culture media.

Immunisation.—The injection of 5 c.c. of the serum of a well immunized horse will give at least a fair immunity for several weeks. No bad symptoms follow the injection except an occasional rash. Another means has also been employed similar to Pfeiffer's or Haffkine's preventive injections for cholera and the plague. Small amounts, grm. .002 of an agar culture of typhoid bacilli are sterilized by heat at 55° C., or by one-half per cent. carbolic acid or other suitable disinfectant and injected subcutaneously. A rise of temperature occurs in about five hours which rarely exceeds 101° F., and rarely lasts over twenty-four to thirty-six hours. With the fever may be slight chilly sensations, some nausea and dizziness. The local reaction in some cases is quite marked and local tenderness and swelling may persist for from three to five days. According to tests by Pfeiffer, Kolle, and others the protective substances in persons thus injected are as abundant and as lasting as after an attack of typhoid fever. These injections have been used in a considerable number of troops, especially in India, and appear to give quite marked protection for some months. Wright states that of 200 attendants at Maidstone Hospital 95 were inoculated. None of these contracted typhoid in the epidemic, while of the remaining 105 not inoculated 19 contracted the disease. At Khartoum, of 8 subalterns 6 were inoculated. Two decided to take their chances of contracting typhoid fever rather than try the inoculations. Both sickened and one died, not one of the six immunized was attacked. This of course was an extreme instance. Wright has inoculated over 3,000 troops with no accidents.

It would seem that for persons who expect to run great danger of infection these preventive inoculations are entirely practical and should be insisted on in armies. They are now being used in some of the troops sent from England to Africa, so that we shall soon accumulate positive information on the subject. The serum acts immediately but the immunity following lasts but a short time. The injections of the culture produce immunity only after five days, but it persists much longer. As only dead cultures are used no infection is possible.

Widal or Serum Reaction.—It is important that the culture employed for serum tests should be one to which we are accustomed. A culture of the typhoid

bacillus in slightly alkaline bouillon grown for not over twenty hours, in which the bacilli are isolated and actively motile, has been found to give the most satisfactory results. Stock cultures of typhoid bacilli can be developed on nutrient agar and the tubes sealed and kept in the ice-box. These remain good for months and even years. From time to time one of these is taken out and used to start a fresh series of bouillon cultures. The serum-test, is in a sense quantitative and not qualitative. By this is not meant that the agglutinating and immobilizing substances produced in the blood of a patient suffering from typhoid infection are the same as those present at times in normal blood or those produced in the blood of persons sick from other infection, but merely that the effect on the bacilli, as seen under the microscope, is identical; the difference being that in typhoid fever, as a rule, substances which cause this reaction are usually far in excess of the amount which ever appears in non-typhoid blood, so that the reaction occurs after the addition to the culture of far smaller quantities of serum than in other diseases.

The results obtained in the Health Department Laboratories, as well as elsewhere, have shown that in a certain proportion of cases, not typhoid fever, there occurs a delayed moderate reaction in a 1 to 10 or 1 to 20 dilution of serum or blood (the proportions originally proposed by Widal), but that probably never, excepting in typhoid fever, or at least typhoid infection, does a complete reaction occur in these dilutions within ten minutes. It is well to note that "typhoid fever" and "typhoid infection" are not synonymous. There may be even death from typhoid infection without intestinal lesions or the usual symptoms. When dried blood is used the slight tendency of non-typhoid blood in 1 to 10 dilution to produce agglutination is increased by the presence of the fibrinous clumps, and perhaps by other substances derived from the disintegrated blood-cells. We may sum up by saying that from many hundreds of cases examined by Fraenkel, Stern, Foster, Scholtz, ourselves and others, it has been found that in dilutions of 1 to 20 or more, a decided, quick reaction is never produced in any febrile disease other than typhoid, while in typhoid fever such a distinct reaction often occurs with dilutions of 1 to 50.

The mode of procedure, therefore, as now employed is as follows: The test is first made with the typhoid bacillus in a 10 per cent. solution of serum or blood. In the case of serum, one part is added to nine of the bouillon culture. With dried blood, a solution of the blood is first made, and the final dilution guessed from the color of the mixed culture

and blood solution.¹ If there is no reaction, that is to say, if within five minutes no marked change is noted in the motility of the bacilli, and no considerable clumping occurs, nothing more is needed; the result is negative so far as this specimen is concerned. If complete clumping and immobilization of the bacilli occur almost immediately this is denominated "a marked immediate typhoid reaction," and no further test is necessary, though it is often advisable to confirm the reaction with higher dilutions up to 1 to 50. If, however, on examination of the mixture in a hanging drop there is no marked immediate reaction, but the bacilli only show an inhibition in their motility and a tendency to clump, which become more marked within ten minutes, this is called "a probable typhoid reaction." The time allowed for the development of the reaction with the higher dilutions is by many from one to two hours, but to us thirty minutes seem sufficient. Positive results obtained in this way may be taken to be conclusive unless there be grounds for suspecting that the reaction may be owing to a previous fairly recent attack. The absence of reaction in one examination in no way excludes typhoid infection. If the case remains clinically doubtful, the examination should be repeated within a week.

Proportion of Cases of Typhoid Fever in which a Definite Reaction Occurs, and the Time of its Appearance.—Of the large number of cases examined in the Health Department laboratories, 20 per cent. gave positive results in the first week; about 60 per cent. in the second week; about 80 per cent. in the third week; about 85 per cent. in the fourth week and about 75 per cent. in the second month of the disease. In 90 per cent. of the cases in which repeated examinations were made (hospital cases) a definite typhoid reaction was present at some time during the illness. The majority of the cases examined which gave no reaction by the twenty-first day failed to give at any time a definite reaction; exceptionally, however, the reaction did not appear until the fourth week, or in the relapse.

Persistence of the Reaction.—This peculiar property of the blood-serum usually persists in persons who have recovered from typhoid fever for several months and occasionally to a slight extent for years. An immediate marked reaction has never been observed in a 1 to 10 dilution of the blood-serum of over one hundred healthy persons examined in the Health Department Laboratories. In several hundred cases of disease other than typhoid fever only rarely did the serum give a marked immediate reaction in a 1 to 10 dilution, and here a complica-

¹To obtain the standard dilution colors certain amounts of fluid blood are dried and then mixed with definite amounts of water.

ting typhoid infection is probable, though several cases, which had so far as we could tell no typhoid infection, gave a delayed partial reaction.

CLINICAL LECTURE.

ULCERATIVE STOMATITIS; ANEURISM OF THE AORTA; CHRONIC NEPHRITIS; ERYSIPELAS OF THE FACE.¹

By H. A. HARE, M.D.,
OF PHILADELPHIA;

PROFESSOR OF THERAPEUTICS IN THE JEFFERSON COLLEGE AND
PHYSICIAN TO THE HOSPITAL.

THE first patient that I show you to-day is a little girl eight years of age who has been brought here by her mother because of a very violent inflammation of the mucous membrane of her mouth. Owing to the straightened circumstances of her parents she has been for a number of months an inmate of one of the large homes for destitute children in this city, and while, as a rule, the care of children in these institutions is admirable, this particular child has evidently been neglected; since on the visit of her mother to her yesterday, the present condition of affairs was revealed with the result that the parents immediately removed the child from the institution.

You will notice that the expression in the child's face is that of continual pain but that she cries very little; that her lips are everted and swollen and that she keeps the muscles of her face fixed in order to avoid any movements which would increase the pain which is produced by the severe ulceration in her mouth.

An examination of the buccal mucous membrane on both sides of the teeth shows that considerable ulceration has taken place and on the right side there is a large ulcer almost as big as a quarter of a dollar, which is so broad and deep that the induration underlying it extends to the skin of the cheek so that the cheek of the child feels as if a large foreign body had been introduced into it. As a result palpation reveals a great deal of brawniness of the skin, and this makes us fear that should the ulceration persist, a perforating ulcer of the cheek may develop, and the child may suffer from what is known as noma, which is an exceedingly grave condition, rarely, if ever seen except in children suffering from profound impairment of nutrition, and which is nearly always fatal both because of the severity of the lesion itself, and because the general condition of the child is so bad that it cannot withstand the severe suppuration of the ulcerative process. You will also notice that on the margins of the tongue and that on the gums around the teeth and on the lower lip on its inner surface are to be found a number of small ulcers which are quite deep and surrounded by an indurated area; and also there is a considerable flow of saliva from the mouth, which is produced by the irritation.

We have before us, therefore, a case of severe ulcerative stomatitis which will require active interference in the way of local treatment. At the same time the greatest

possible care is needed in the treatment of the child's general system.

You will meet with many cases of simple catarrhal stomatitis in practice, but unless you are connected with some institution to which many children in a depraved state of health are admitted you will rarely see such a case as this. The child, like many other children who have been forced to depend upon themselves to a large extent, is older than one would expect from a statement of her years, and I feel convinced that she is sufficiently intelligent to be able use a mouth-wash. I have therefore, given her a prescription which contains:

R Potassium chlorate	gr. xx
Tinct. myrrh	m. xxx
Elix. of calisaya	℥j.

This is to be diluted one-half with water, and used as a mouth-wash.

If on examination of her urine we find that it is normal and that the kidneys are not irritated, I shall direct that half a dram of this mixture shall be given to the child, internally, every six hours, since the chlorate of potassium is eliminated by the salivary glands, and will continually bathe the inflamed mucous membrane.

Some of these ulcers may also be advantageously affected by touching them with a solid stick of nitrate of silver, and the pain of this application may to a large extent be decreased by applying cocain beforehand. Care must be taken that much cocain is not employed, since if it is swallowed or absorbed it may produce disagreeable symptoms, and furthermore by dilation of the capillaries in the healthy mucous membrane may disturb the local nutrition of the mucous membrane of the mouth.

The second patient that I wish to speak to you about is a man who comes before us suffering from a very large aneurism of the descending portion of the aortic arch. It has eroded part of his ribs and sternum, and is protruding at least two inches above the level of his chest wall, yet curiously enough he has at no time suffered any pain whatever, nor is there any evidence of pressure upon nerves, blood-vessels, or bronchial tubes. He has some dyspnea on exertion, and is forced to keep to his bed because of the palpitation of the heart which ensues if he makes any effort. Because of the fact that his aneurism is typically of the sacculated form, the patient presents a type of that variety of aneurism which should be treated by means of the introduction of a coil of gold wire and electrolysis. You will remember that I performed this operation in this clinic in March, 1898, with much benefit in a case of aortic aneurism, and although the man died a number of months later from an extension of the aneurism in the distal portion of the aorta, the operation itself may be considered a distinct success because he lived for a number of months in comparative comfort, and was up and about, whereas he had been bedridden before the operation. I have performed this operation in another case which I am about to report in one of the medical journals, with an equal degree of success. One would suppose that the introduction of a large hollow needle through the thin wall of an aneurismal sac might tend to produce sudden rupture of the sac and instant death.

¹ A Medical Clinic at the Jefferson Medical College Hospital.

But the operation has been performed twenty-five times so far as I know, and in no instance has this accident taken place. During the last year I believe that the operation has been performed as frequently as it had been done in the preceding five years, largely because of the good results which have ensued.

The third case that I wish to show you is a man who is suffering from chronic parenchymatous nephritis. You will notice the pallor of his skin which is quite characteristic of the disease, and you will also notice that his face is slightly puffy and that his lower extremities are slightly edematous. In the presence of any condition of edema, it is always your duty to carefully examine the heart in order to discover whether it is in any way responsible for the effusion of fluid into the subcutaneous tissues. If it is, the patient should receive some cardiac tonic, such as digitalis, with the object of improving the action of the heart. If, on the other hand, the heart-muscle seems to be doing its work properly, digitalis is not needed, and you may, if you choose, administer a preparation which for many years has had great popularity in this condition, namely: liquor ferri et ammonii acetatis, or Basham's Mixture, which preparation is supposed, by reason of the iron which it contains, to relieve the anemia, and by reason of the acetate of ammonium to act as a diuretic and so increase urinary flow. I am convinced that in a considerable proportion of cases it is wiser to administer a small dose of iron in pill or other form, and to give the liquor ammonii acetatis alone; as, under these circumstances, the patient gets the diuretic influence without having his system overloaded with iron. There are but a very few grains of iron in a healthy person's body, and the administration of several grains a day places a quantity of this material in the body of the patient which is far in excess of its needs, and which must be stored or eliminated. Moreover, large doses of iron are somewhat apt to produce constipation and "fulness of the head;" both of which conditions are to be avoided in the presence of renal disease, since the bowels ought always to be kept active in order to aid the kidneys in eliminating all impurities from the body. In some of these cases where the kidneys seem to be exceedingly torpid very good results follow the combination of liquor ammonii acetatis and small doses of tincture of cantharides, about 1 or 2 minims of the latter at the most, three times in twenty-four hours. With this treatment the urinary flow is frequently markedly increased. Another remedy which you should remember is useful in this class of cases is the old-fashioned mixture containing bitartrate, or acetate, of potassium and juniper berries. An ounce of juniper berries is added to a pint and a half of water, and this is boiled down to a pint. The fluid is then strained, [and to it is added $\frac{1}{2}$ to 1 ounce of bitartrate of potassium. This mixture is then given to the patient in wineglassful doses, so that he takes the entire quantity in twenty-four or thirty-six hours. This usually produces a profuse urinary flow, and is also apt to move the bowels.

The last case that I show you is one of erysipelas of the face. The infection has evidently taken place from a break in the skin at the angle of the nostril. This is a

common point of entrance for the infectious micro-organism of erysipelas, which, you will remember, is practically identical with the streptococcus of ordinary pus. Every case of facial erysipelas which I have seen during the past ten or twelve years I have treated by first cleansing the skin thoroughly with antiseptic lotions and then applying quite a thick layer of ichthyl ointment of the strength of 2 or 3 drams to 1 ounce of lanolin. A piece of surgical lint large enough to cover the face, with holes cut in it for the nose, eyes, and mouth, after having been smeared with the ointment, is laid over the inflamed parts. This application is a very efficient one in relieving the sensation of pain and burning, and while the odor of ichthyl is somewhat objectionable to some persons, its efficiency overcomes this slight disadvantage. To a certain extent the odor of ichthyl can be overcome, you will remember, by adding to the ointment a few drops of oil of citronella.

CLINICAL MEMORANDUM.

THE TREATMENT OF THE PERITONEAL CAVITY IN CERTAIN RARE FORMS OF INFECTION FROM APPENDICITIS.

By JOHN A. WYETH, M.D.,

OF NEW YORK;

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THE two following cases are submitted to demonstrate; first, the method of disinfection, as far as possible, of the general peritoneal surfaces of the abdominal cavity after a widespread infection due to peritonitis, and; second, the method of dealing with a partial or localised infection.

CASE I.—V. L., male, aged twenty-seven years, lawyer. Family and previous histories have no bearing on this case as presented. On the night of February 24, 1899, having eaten heartily at dinner at 7 o'clock, and added to this a heavy supper at midnight, he retired at 1 A.M., but could not sleep on account of restlessness and certain painful sensations which seemed generally diffused over the abdominal region. Early on the morning of the 25th, of his own accord, the patient took two Carter's liver pills, followed later by free draughts of Hunyadi water. This produced free purgation, but no especial relief to the pains which continued, but which were not severe enough to require the attendance of a physician until midnight of the 25th, twenty-four hours after the first symptom of his illness. His temperature at this time was 103.6° F., pulse 140. At 9 o'clock in the morning of the following day, thirty-two hours after the first suggestion of trouble, I saw the patient. His pulse was 120, temperature 103.2° F.; abdominal walls rigid and excessively tender over the region of the appendix. His face wore the expression of collapse peculiar to those suffering from dangerous lesions of the abdominal viscera or of general peritonitis. He was carefully lifted to a stretcher without leaving the recumbent position, placed in an ambulance and conveyed to the private pavilion of the New York Polyclinic Medical School and Hospital.

I operated on him at 2 o'clock, February 26th, thirty-

eight hours after the first symptoms. On opening the abdomen a quantity of seropurulent liquid flowed from the general peritoneal cavity. This fluid had the offensive odor common to general peritonitis following gangrene of the appendix, or from perforation of the intestine. The appendix was found gangrenous but was not yet ruptured. It was tied off close to the cecum and general irrigation of the entire peritoneal surfaces was done in the following manner:

A normal salt solution, at a temperature of 110° F. to 115° F., was placed in a large irrigator at a height of about five feet above the level of the patient. To the end of a pipette a good sized rubber tube was attached, and this was carried first into the upper portions of the patient's abdomen in the region of the spleen which was thoroughly flushed with the salt solution. The end of the tube was then carried in front of the transverse colon and over the stomach, underneath the omentum; then into the hepatic region, behind the pockets formed between the ascending and descending colon and the abdominal wall. The quantity forced through in this portion (the upper part of the abdominal cavity) was two to three gallons. The same general flushing was applied to the deeper portion of the cavity, the fluid being allowed to run out through the incision after it had over-distended the abdominal cavity. I then repeated this irrigation thoroughly. By the use of long streamers or pieces of sterile gauze, carried in by the hand, as much of the fluid was removed as was possible. I consider this an essential feature in the treatment of this particular form of general peritonitis, and extraordinary care should be given to the various pockets which exist behind the ascending and descending colon, and to the under surfaces of the liver, spleen, stomach, and the great omentum.

The same drying out process was applied to the loops of the small intestines and to the pelvis, to which the greatest attention should be given. A good-sized wick of absorbent gauze was then placed behind the bladder in the most dependent portion of the pelvic cavity and brought out at the external wound. Another large wicker drain was laid along the outer side of the ascending colon and also brought out at the incision. Sutures of silk-worm gut were inserted but the edges of the wound were not approximated at the time of the operation, this being left open for drainage. The patient rallied well from the operation, temperature gradually declining, and recovery was uneventful. The gauze packing and drains were removed on the third day, and two rubber tubes inserted in the tracks which the gauze left. At this time the silk-worm gut sutures were tied so as to bring the edges of the wound well together, but without too much pressure on the tubes. The patient was required to remain in a recumbent posture for six weeks in order to permit as complete a union of the wound as possible, and to guard against the formation of a ventral hernia. At this time, nine months having elapsed, he has no suggestion of ventral hernia and is in excellent condition.

CASE II.—E. B., male, five years old. On September 19, 1899, the child complained of pains in the abdomen, vomited, and was found to have slight elevation of

temperature. His father, an army surgeon, gave him purgatives, cleansing the bowels thoroughly. Symptoms of pain and the fever disappeared.

On the 22d of September the symptoms recurred, temperature was found to be 102.5° F., and pulse 100. By this time the pains were well localized over the region of the appendix. The child was brought to my private infirmary on this same date (September 22d), and on examination his condition was deplorable. Although the temperature was only 101° F., and the pulse 100, he was in marked collapse. His father told me that he had noticed symptoms of collapse while on the train coming to the city. It is very probable that the rupture of the appendix demonstrated by the operation occurred at that time.

I placed him at once under the influence of chloroform, and upon opening the abdomen found a gangrenous appendix which had ruptured. A large quantity (probably as much as two teacupfuls) of soft fecal or intestinal contents had escaped and was in contact with a very considerable surface of the peritoneum of the abdominal wall and contiguous loops of the intestines. A general peritonitis was not yet established as in the preceding case. After tying off the appendix all the loops of the intestines which were found in contact with the escaped feces were thoroughly cleansed. The child was tilted to the right side, and the intestine was thoroughly mopped with wisps of gauze dipped in 1 to 2000 bichlorid solution, and dried as soon as the washing was completed. Not more than one foot of the intestine at a time was brought out through the incision, and this was returned as soon as it was cleansed. The peritoneal surfaces, other than intestinal, were then thoroughly mopped off in the same way and dried. As there was no general peritonitis, no general flushing of the cavity was undertaken.

An effort was made to hold all portions of the intestines which had come in contact with infectious material as near the wound of incision as possible. These were walled off from the general cavity with layers of gauze, and silk-worm gut sutures inserted so that the edges of the wound might later be approximated. A good-sized wicker drain was placed between the cecum and ascending colon and the abdominal wall, and a large wicker gauze drain carried down into the lowest portion of the pelvic cavity in contact with the posterior surfaces of the bladder. The child rallied from the operation, was kept carefully on the back, tilted a little towards the right side. No opiates were administered. Twenty-four hours after the operation, symptoms of obstruction of the intestines being present, which I feared were due to the packings of gauze, the child was again placed under chloroform and all the gauze carefully removed. As the distention of the intestines was not immediately relieved by this procedure, a second exploratory wound was made above the umbilicus in order to render it positive that there was no twist or knuckle obstructing the lumen of the bowels at this point. While the patient was under the anesthetic an enema of two ounces of sulphate of magnesium was thrown into the rectum and sigmoid colon.

The bowels moved within six hours after the operation and with this all symptoms of obstruction disappeared and the patient made an uneventful recovery.

The method carried out in the first of the foregoing cases is one that I always practise when there is a well-established general peritonitis with a large quantity of fluid which has the peculiar, strong, offensive odor of decomposition which is met with in the larger proportion of these cases. The irrigation is essential and the careful drying out of the cavity is in my opinion equally an important feature of the treatment. In certain cases when there is a very considerable quantity of fluid which has been brought in contact with the intestines, but which has not an offensive smell, it is the better practice in my opinion to drain the fluid and dry the peritoneal surfaces without irrigation. When the infectious material has not been walled off by adhesions, but has spread over a limited area of the free peritoneal cavity in the neighborhood of the appendix or in the deeper portions of the pelvis, it is better not to irrigate for fear of carrying the infection to those portions of the abdominal cavity not yet involved. In this case it is better, through a free incision, to practise local disinfection and establish wicker drainage from the two important points, *vis.*: the cul-de-sac between the cecum, ascending colon, and abdominal wall, and the lowest portion of the pelvis, immediately behind the bladder. In certain instances, in women, it is advisable, after disinfecting the vagina as thoroughly as possible, to open through Douglas' pouch, using gauze drainage in this direction.

The administration of calomel triturates and salines to move the bowels every day is an essential adjuvant to the management of these cases, while the employment of narcotics is contraindicated.

MEDICAL PROGRESS.

What Is the Secret of Cure of an Ulcer of the Leg?—CHIPAULT (*Centralb. für Chir.*, October 7, 1899) lays stress on the frequent change of the dressing and bandage in the treatment of ulcerations of the leg. As granulations rapidly accustom themselves to a stimulating medicinal substance, it is, therefore, necessary to change the application every few days. He attributes the success which some men have in the cure of these ulcers to the fact that in their practice they follow out these principles.

Endocarditis and Bacillus Influenza.—MABEL F. AUSTIN in a preliminary report (*Johns Hopkins Hospital Bulletin*, October, 1899) amplifies our knowledge of the relationship existing between influenza and endocarditis. The occurrence of endocarditis during an attack of influenza as a clinical fact has been known for some time, but the presence of the micro-organism, though demonstrated for other tissues of the body, has not before been reported in the endocardium. In this contribution an organism closely agreeing in its morphological features to the bacillus influenza is described as having been isolated from three fatal cases of influenza. Unfortunately the investigator

was unable to cultivate the bacillus, and hence the absolute proof of casual relationship is not obtained.

Hematoma of the Neck Simulating Aneurism.—LARUE (*New Orleans Med. and Surg. Jour.*, October, 1899) describes a pulsating tumor of the neck which several physicians took to be an aneurism of the common carotid. The tumor followed a stab-wound which the patient had received by a pen-knife ten months previously, and as it had produced vertigo and an irregular heart action its removal was decided upon. When exposed it was found that it was not an aneurism, but an encapsulated hematoma, some of the clots having become laminated. The sac was opened, thoroughly cleansed, and sutured to the skin. It was interesting to note the slight change which had taken place in the blood-clots, although they had existed for nearly a year.

Methylene-blue as a Hypnotic.—VALLON and WAHL (*Le Progrès Médical*, October 21, 1899) have tested the hypnotic properties of methylene-blue by administering it to six insane patients. The result in one instance was very satisfactory. No special results followed its administration to four patients, while the delirium of one patient was rendered much worse by it, the color of the urine which he passed leading him to suppose that he had been poisoned, and giving him other ideas of persecution. After such a brief test, however, the authors hesitate to deny the claims which have been made that methylene-blue is a hypnotic in the insomnia of insanity. The medicine was given in capsules containing about 4 grains.

Fatal Case of Trichinosis.—W. T. HOWARD (*Philadelphia Med. Jour.*, December 2, 1899) gives a detailed description of a fatal case of trichinosis from both the clinical and pathological aspect. An interesting feature of the disease is the occurrence of eosinophile cells in the blood- and heart-muscles, attention to which was first called by T. K. Brown, working at Johns Hopkins. The observations of Howard confirm the findings of this worker with reference to the marked increase of eosinophile cells in the heart-muscle, but he was unable to substantiate the claim that a general eosinophilia of the blood is a constant feature. Howard believes that in acute trichinosis cells with eosinophile granulations may be stored or formed in the heart-muscle, the peribronchial tissue, and the spleen. A decided increase in the number of eosinophiles in the gastric and intestinal mucosa suggests their formation *in situ* under the influence of the trichina, while these latter were either in the intestinal canal or closely adjacent tissues.

The First Suburban Sanatorium in Russia for Indigent Tuberculous Patients.—PAVLOWSKAJA (*Rev. de la Tuberculose*, October, 1899) chronicles the inauguration of the first suburban sanatorium opened in Russia for poor phthisical patients. It is at Taitzi, and is the result of three years of agitation by a medical society at St. Petersburg. It is built upon land given by the Emperor, who also contributed half a million rubles toward its establishment. It contains accommodations for twenty men and twenty

women. In the treatment of the patients attempts have been made to realize all the advantages of good diet, abundant air, physical and moral repose, and agreeable occupation for such as are able to perform any labor. The success of the institution is shown by the fact that fifty per cent. of the patients treated during the first year were markedly improved; twenty per cent. were slightly improved, while sixteen per cent. and fourteen per cent. respectively were unimproved or died.

Cerebral Hemorrhage and Labor.—E. M. LAZARD (*Philadelphia Med. Jour.*, December 2, 1899) reports an unusual case of cerebral hemorrhage occurring during labor in a young woman of thirty-one years of age. She had had two previous confinements; one with instrumental interference, the second normal. In the present instance she gave birth to a six-month's fetus after twelve to fourteen hours of labor, and during the expulsion of the membranes became semiconscious, with accompanying stertorous breathing. Four days following labor she died. During the interval of labor and death she remained in a comatose condition, following two general convulsions, which occurred on the first day. Necropsy showed the pia mater over left occipital lobe and part of the cerebrum to be intensely congested. There was rupture of a blood-vessel in the left corpus striatum, a clot of blood extending from the posterior to the anterior part of the internal capsule, and into the lateral ventricle. There was also a small hemorrhage in the right caudate nucleus and blood on the surface of the corpus striatum.

Intestinal Obstruction Caused by a Piece of Gauze.—REHN (*Archiv für Klin. Chir.*, Bd. 60, p. 296) relates another instance to be added to the series of curious results which follow the leaving of a gauze compress in the abdominal cavity. This accident has led to fatal peritonitis, but sometimes without the occurrence of inflammation the compress has broken through into the intestine and has been passed from the anus. Rehn's patient was a woman aged thirty-two years, from whom an adherent and inflamed tube was removed by laparotomy. The pelvis was drained with gauze, which was removed on the eighth day. The wound healed in a short time, and for four months the patient was apparently well. She then complained of pains in the stomach, and a week later reentered the hospital, presenting the symptoms of intestinal obstruction. After ether was administered, a distinct tumor was palpable in the right side of the abdomen. Laparotomy was performed, and sixteen inches of the upper portion of the small intestine being found necrotic was resected. In the lumen of the resected portion of intestine was a gauze compress which, when spread out, measured about a yard square. Its presence could not be explained. The patient made a good recovery, but neither she nor the physicians were able to explain how the compress could have entered the upper portion of the small intestine.

The Influence of Marriage upon Hysterical and Chlorotic Women.—MEINERT (*Centralbl. für Gyn.*, November 4, 1899) says that formerly the idea was generally held that marriage exercised a beneficial effect upon hysteria, but

that at present the opposite view is the popular one. According to his observation a change in condition is sometimes productive of benefit and sometimes the reverse is the case. In the light of the modern idea that hysteria is a psychosis, the new home of the hysterical woman after her marriage may be looked upon as a private asylum in which the hysterical patient may or may not be wisely treated. In chlorosis, too, according to this author, marriage may be productive of good or evil effects, but on totally different grounds. Here improvement keeps pace with an increase in the girth of the patient. For instance, in pregnancy, especially in the second half of it, chlorotic patients are almost invariably in an extremely good physical condition. The gradually growing uterus replaces the sunken abdominal organs and opens up the narrow aperture of the thorax, which is the cause of the chlorotic enteroptosis. This action is increased with each new pregnancy if the patient does not reproduce the previous injurious condition of affairs in the meantime by returning to tight clothing. In general the chlorotic symptoms of young women vary inversely to the circumference of their waists.

Treatment of Acute Dyspeptic Diarrhea.—KENNER (*North Carolina Med. Jour.*, November 5, 1899) treats fermentative diarrhea, which, in the vast majority of cases, is due to improper diet, by evacuation of the intestinal canal, followed by a soothing and disinfecting remedy. The best cathartic in such cases is sulphate of magnesia given in doses of $\frac{1}{2}$ -ounce to 1 ounce. After it has produced the characteristic watery stools, 10 grains of orphol are given every two hours. This remedy contains eighty per cent. of oxid of bismuth and twenty per cent. of betanaphthol. It will more rapidly relieve these attacks of diarrhea than any other agent which the writer has tested. A cure will, however, be fruitless unless a correct diet is also insisted on. Milk, rice, fine flour puddings and bread, toast, eggs, crackers and cheese, dried meats, and fish in small quantities should be given instead of fresh meat, fresh fish, and vegetables.

A Perfect Antidote for the Poison of Snakes and Spiders.—KENT (*Charlotte Med. Jour.*, November, 1899), has convinced himself that one of the club mosses, known as *selaginella apus*, is a perfect antidote for the poison of snakes and spiders. This plant is familiarly known as "snake-moss," and its virtues were known to the Indians of Virginia. About $\frac{1}{2}$ -dram of the moss is macerated thoroughly with 1 ounce of sweet milk. The milk containing small fragments of the moss is then drunk by the patient, while the balance is bound upon the wound. The writer cites a number of cases of successful use of this remedy, of which the following is a good illustration:

James T., age eleven years, was bitten over the instep of his right foot by a large copperhead moccasin. One hour after the bite he was suffering much pain, and his foot was swollen to twice its natural size. Moss was at once given with the milk, with almost immediate relief of pain. The next morning the swelling was all gone, and the boy was at play, with only the scratch of the bite to remind him of his encounter with the snake.

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PNEUMONIA AND ITS TREATMENT.

It is a source of gratification to be able to present to our readers this week Dr. Andrew H. Smith's able and extremely suggestive paper on this very timely subject. The interesting discussion that followed its reading at the New York Academy of Medicine also appears in another column.

Dr. Smith's views upon the essential pathology of pneumonia are certainly novel. The double circulation in the lung, the bronchial and the pulmonary, is a factor in the nosology of pneumonia deserving of serious attention, and yet, if we mistake not, this is the first instance in which it has practically been taken into consideration in its relation to pneumonia. That it must modify in an important way the course of inflammatory processes when they occur in the lung seems most reasonable. The view that pneumonia is not really a pneumonitis or true inflammation of the lung tissue but only a growth of cultures of the pneumococcus on the serum exuded into the alveoli with consequent absorption of toxins from these cultures, to explain the constitutional symptoms of the disease, may not be generally accepted in its entirety. No one can read Dr.

Smith's article supporting this opinion, however, without feeling that original, suggestive, and indeed very practical theories are opened up by it.

As to the treatment of pneumonia, unfortunately it cannot be said that there is anything new. It is evident that we have yet to wait for the development of a specific, perhaps antitoxic, treatment. Authorities generally are agreed at present that the indication is for antiseptic treatment in some form. Whether the antiseptic to be employed shall be quinin or one of the salicylates or a creosote preparation is a matter of individual opinion. Very probably calomel because of its, at least, supposed antiseptic properties should be added to this list. Calomel and quinin have long been in use, however, and have largely lost their vogue. The salicylates and the creosotes are now the most popular remedies. For creosote or its carbonate there is at present a very favorable medical sentiment.

There remains as ever the symptomatic treatment. Whether ice or poultices should be used for the pain and restlessness at the beginning of the affection [opinion is divided. The employment of ice is becoming more and more general in this country, however, as it has in Europe for the last ten years. Most of the remedies, quinin, the salicylates and creosotes, that are claimed to modify the course of the pneumonia itself, do undoubtedly lower the temperature. Whether it is ever advisable deliberately to lessen the fever unless hyperpyrexia, 105° F., or more, develops is an extremely doubtful question. A large series of statistics analyzed some time ago by Wilson Fox in England seems to show that the largest percentage of recovery from pneumonia occurs in cases in which the temperature during the most of the disease has ranged between 104° F. and 105° F. Fowler and Godlee, in their recent book on "Diseases of the Lungs," commenting on this, say that in their experience "a low range of temperature is not necessarily a favorable sign." They advise against all direct antipyresis when the temperature remains in the proximity of 104° F.

Sustaining treatment and stimulation still remain the sheet anchor in the treatment of pneumonia. Some years ago one of our best American clinicians said that if he were to be given on the one hand all the drugs of the pharmacopœia except alcohol, and

on the other alcohol alone, for the treatment of pneumonia, he should not hesitate to choose the latter. Despite the advances in treatment during recent years he would probably consider this view as true now as when first promulgated. Eichhorst of Zurich, a most conservative clinician, in the last edition of his text-book expresses the opinion that alcohol is not used sufficiently in pneumonia, and advises its exhibition in various forms almost from the beginning of the disease. Other stimulants are not as effective. Strychnin seems by common agreement to stand next in efficiency to alcohol. Despite Petrescu's results (two per cent. mortality in young adults) it is doubtful if the use of digitalis in large doses is advisable.

Pneumonia remains then a disease in which symptoms must be met as they arise, and in which the nursing of the patient means most. Undoubtedly at least as much harm as good has been done by supposedly specific medication. Large doses of strong drugs have been recommended at various times for the treatment of the disease even by experienced and conservative physicians, but the conviction has grown that they are a serious mistake. Drugs that are depressant in action must be used only with the greatest circumspection, no matter how cardinal the indication for which they are exhibited. The care of a pneumonia patient belongs as yet to the art not the science of medicine, and gives occasion for the exercise of the highest practical medical skill.

RECURRENCE AFTER OPERATION FOR MAMMARY CANCER.

TWENTY years ago Professor Volkmann of Halle offered the suggestion that mammary cancer removed by operation might be considered as definitely cured if there was no recurrence at the expiration of three years. The suggestion was accepted by surgeons generally as a practical working conclusion. Those were days, however, when what is recognized as radical operations for cancer of the breast were as yet unknown, and the patients that remained free from the disease at the end of three years were few. In the case of the survivors there grew up finally the suspicion that the growth could not have been malignant. Even surgeons of wide experience

began to doubt if they had ever seen a case of cancer absolutely cured by operation.

As operative intervention has come to be applied earlier and earlier in the disease and the operation has become more radical, it develops that Volkmann's rule suffers many exceptions. Cases of recurrence of cancer after four years are frequently reported and not infrequently even after longer periods. Out of 90 cases operated on by Barker at University College, London, during the last twenty years, 25 are now alive, but in only 6 of the cases has more than five years elapsed since the operation. In five cases deaths from recurrence have taken place later than five years after the operation. One of the patients in whom recurrence was the cause of death had lived seven years and eight months, while two died from the same cause six years and four months after the operation. It is evident then that even the six patients who have survived the operation more than five years, without recurrence, are not thereby assured of freedom from all further cancerous invasion.

Only two patients have survived ten years since the operation, and one of these compels a most unfavorable prognosis. She has noticed a small lump for three years, the nipple has been retracted for six months, the skin is involved, the axillary glands palpably affected, and the tumor fixed to the pectoral muscle. The other patient, who is alive eleven years and seven months after operation, is in an almost equally unfavorable condition. She had noticed the tumor for five years previous to operation, and the glands in the axilla though palpable, were found at the operation extensively cancerous, though there was not in her case any adherence of the tumor to the pectoral muscle. In both cases the cancer was of the scirrhus variety, in women aged respectively forty-five and fifty-four, so that it is evident that the type of cancer is one of the most important elements in prognosis and that it means much more than either the duration of the growth or its extent, though these are usually considered the all-significant factors.

Two views of this fact of late recurrence of cancer have been recently discussed. The Italian and French students of malignant neoplasms, who consider them as due to parasites, argue that late recurrences substantiate the parasitic theory, since it is easier to understand long latency on the part of par-

asites than of tissue elements aroused to malignant action. Simpson, of University Hospital, discussing these cases of Barker's in the Liston Prize Medal Essay for 1898-1899 of University College, London (London *Lancet*, July 8, 1899), takes the position that these cases of late recurrence seem to indicate that cancer is a general infection with a special manifestation. Either of these views are of extreme interest because of their practical bearing on the cancer problem, and make clear that the careful observation and collation of cases surviving for years after successful operation may throw great light on the disease.

THE MEDICAL ARRANGEMENTS FOR THE TRANSVAAL CAMPAIGN.

THE Medical Department of the British Army has adapted its organization most carefully to the needs of the campaign and the nature of the country, and so far it is working with admirable smoothness. Each army corps has roughly speaking about forty-five surgeons in immediate charge of the men at the front, who are also responsible for the sanitation of their respective camps. Under these are a full force of special Army Medical Corps men, and a supplementary body of bearer companies, one to each brigade, each one consisting of forty-four privates, three commissioned and thirteen non-commissioned officers. Thus the medical officer is not left to the pleasure of the commanding officer of the company or division for a special or chance detail of men for this important service, as was unfortunately the case on several occasions in our late experience in Cuba. About a third of these bearers accompany the regiment into action as "stretcher squads" collecting the wounded and bringing them back to the first or "collecting" station. Here will be placed the ambulances of the "first line," which will receive the men and carry them back to the dressing-station where sufficient security and leisure is afforded for a full and careful examination of the wounds. After these have been attended to and dressed the patients will be placed in the ambulance in waiting, known as the "second line," and carried back to the field hospital.

A field hospital is attached to each brigade and has equipment for 100 beds, though these are so

arranged that sections of twenty-five can be utilized separately if required. Fifteen of these are already equipped and their staff consists of four medical officers and a quartermaster, twelve sergeants and corporals, twenty-three privates of the Royal Army Medical Corps, and nineteen privates of the Army Service Corps, for transport duties. From the field hospital the wounded will be sent to the nearest post provided on the railway, and those unable to travel detained at a special stationary hospital arranged at the nearest convenient point on the line, which again has accommodation for 100 patients, and an equipment similar to that of the field hospital. Four of these have already been put in the field in South Africa.

Those of the wounded who are in condition to travel will be sent on by special hospital-train or ambulance-train, of which two are already in the field, and one other in process of construction at Birmingham, to the Base Hospital, which will be at or near one of the ports of embarkation and have a capacity of 500 beds. From this point the patients will be brought by the hospital ships, "Trojan" and "Spartan" to Capetown to the Wynberg Sanatorium Hospital, and from here such as require to be invalided home will be conveyed by the new "Princess of Wales" hospital ship and the American Ladies' hospital ship "Maine" to England.

Thus a perfect chain of carefully arranged relay stations, with gradual sifting out and classifying of the cases has been planned, which on paper at least appears to leave little to be desired. As the country though which the lines of communication run is fairly well settled and fertile there ought to be little or no difficulty in getting abundance of supplies of vegetables and fresh foods at the various stations. The point regarded as likely to be weakest in the system is that of the Base Hospital in Durban, for while the climate of the high veldt, though almost tropical by day and very cold by night, is far from ideal, yet upon the whole it is regarded as healthful and rather bracing than otherwise; at the coast, on the contrary, especially during the summer season which is just beginning, the climate is hot, damp and depressing, and it would be highly desirable to either detain the wounded at some point in the interior, as long as proper supplies can be secured, or to make the stay at Durban

before transferring to the sick-transport for Capetown as short as possible.

So far everything has worked perfectly but of course as yet only about a fourth of the total strength has been actually engaged, and it remains to be seen how the system will bear the strain of the heavier casualty lists of the entire triple line of advance. One condition has been found much more favorable than was anticipated and that is, the remarkable cleanness and freedom from complications, already alluded to, of the wounds made by the Mauser bullets, so that even out of the large lists of wounded, bearing eloquent testimony to the accuracy of the Boer marksmen, which have resulted from the comparatively small engagements already fought, only a small per cent. have had to be sent further back than the field hospitals, so that the stationary hospitals are not at all crowded and no accumulation of any importance has as yet occurred at Durban.

The entire strength of this admirable army of peace which nineteenth century civilization and humanitarianism are sending into the field, to do its best to counteract the effects of the huge engine of destruction which it accompanies, amounts to nearly 3100 men and nurses with 282 medical officers of the Army Corps, and 68 civilian surgeons, almost a brigade in itself. While three hundred years ago our warlike ancestors would probably have regarded this splendid corps, as so much good material withdrawn from the fighting strength, yet as a matter of actual increase in practical fighting power there is no possible capacity in which these men could be employed to better effect. Sickness disables three times the number that either the bullet or the bayonet does, and the army which can put the largest percentage of sound [and healthy] men into the fighting line, at the end of their advance or retreat as the case may be, is the one which is almost certain to be successful in the campaign. It is easy enough to pour men into the field in thousands, but to get them to the front in fit physical condition is a far more difficult problem, and this an efficient Army Medical Corps only can solve.

ECHOES AND NEWS.

Dr. Carr Assumes the Editorship of "Archives of Pediatrics."
—With the January, 1900, number Dr. Walter Lester

Carr of New York will become the editor of *Archives of Pediatrics*.

Leprosy in the Island of Guam.—In a report to the Navy Department, Lieutenant Commander V. L. Cattman, who has visited the Island of Guam, refers to the existence of leprosy in that island.

Six Children at a Birth.—It is reported that Mrs. J. Karl of Mobile, Alabama, gave birth to six male children, December, 8, 1899. Mother and children are reported as doing well.

American Nurses Honored in London.—The British Medical Society recently gave a reception to the American nurses who are to accompany the hospital ship "Maine," when she sails for South Africa.

A Practising Physician at Ninety-Six.—Dr. Charles F. H. Willgoos, the oldest physician in Ohio, has lately celebrated his ninety-sixth birthday. He is said to be in good health and to be still in active practice.

New Serum for Tuberculosis.—Dr. A. R. Jenkins of Chicago, who has studied with Professor Koch, declares he has discovered a serum which will reveal the presence of tuberculosis before it can be detected by other known means.

Medical Advisers of the Czar.—Through the *Medical Press* we learn that the Czar has no fewer than twenty-seven medical attendants. They include a physician-in-chief, honorary physician, three surgeons, and four honorary surgeons, two court physicians and three specialists for the Czarina.

Queen's Gift to the "Maine."—The Queen has given a union jack to the hospital ship "Maine" as an evidence of her gratification at the work of the American women who raised the funds for fitting out that vessel. On December 16th the Duke of Connaught presented the flag on behalf of her majesty.

An International Congress on Tuberculosis.—The *British Medical Journal* says that it is proposed to hold an international congress in London during May, 1901. The congress is to be held under the auspices of the National Association of Great Britain for the prevention of consumption and other forms of tuberculosis.

Practitioner's Society of Dallas (Texas).—On December 1st the above-named society was organized at the Hermitage Hospital and the following officers elected: Lawrence Ashton, M.D., president; J. B. Titterington, M.D., vice-president; C. L. Johnson, M.D., secretary. The next meeting will be held at the residence of the president on Monday, December 18, 1899.

Expectoration Fine Reduced.—The Health Board of Hoboken, N. J., recently reduced the fine imposed for expectorating in public places from \$10 and \$25 to a uniform fine of \$3. It was thought that the police refrained from making arrests for the offense of expectoration be-

cause the public considered the penalty too severe. This seems to be a wise and practical movement.

A Prize Fund for Institute of France.—M. Osiris, a wealthy Parisian, noted for his charities and public spirit, has presented to the Institute of France a sum representing an annual income of 32,000 francs for a triennial prize of 100,000 francs for the most remarkable work or discovery of general interest, especially in the fields of surgery and medicine in exhibition years. The prize is open to all countries.

Business Committee of the New York State Medical Society.—The President of the Medical Society of the State of New York has appointed the following Business Committee: Dr. Wendell C. Phillips, Chairman, 350 Madison Avenue, New York; Drs. Henry L. Elsner, Syracuse; Chauncy P. Biggs, Ithaca. Communications concerning papers to be presented at the next annual meeting, January 30 to February 1, 1900, should be sent to them.

Southern Medical and Gynecological Association.—The following officers were elected: President, Dr. A. M. Cartledge, Louisville, Ky. Vice-presidents, Drs. Manning Simons, Charleston, S. C., and W. P. Nicholson, Atlanta, Ga. Secretary, Dr. W. G. B. Davis of Birmingham, Ala; Treasurer, Dr. W. D. Haggard, Jr., Nashville, Tenn. Atlanta, Ga., was selected as the place for holding the next meeting in 1900. Time, second Tuesday in November.

Medical Hero of Transvaal War.—Surgeon-Captain R. A. Buntine has recently performed a valient deed under Boer fire and is likely to receive the V. C. from the authorities. While on patrol duty the Natal Carabiniers were surprised by ambushed Boers and forced to retire, leaving a wounded trooper on the ground. Dr. Buntine with his servant rode back, dismounted, placed the wounded man on his horse, and then in the midst of a sharp rifle practice, ran back to camp. All three arrived in safety.

Poisoning by Refrigerated Meat.—The poisoning of 200 soldiers from eating refrigerated meat is reported. According to a letter received 200 of the 1300 men of the Twenty-fifth Regiment were poisoned while en route to Manila on the transports "Rio de Janeiro" and "Sikh," by eating fresh beef supplied the vessels at Honolulu. One man died despite the efforts of the surgeons. A lieutenant in the regiment attributes the poisoning to a faulty refrigerating plant whereby some of the acids used in making ice came in contact with the meat.

New Jersey Sanitary Association.—The New Jersey Sanitary Association in session at Atlantic City during the past week elected officers as follows: President, George W. Howell of Morristown; first vice-president, Herbert B. Baldwin of Newark; second vice-president, H. Brewster Wills of New Brunswick; third vice-president, Dr. J. L. Leal of Paterson; recording secretary, James A.

Exton of Arlington; corresponding secretary, N. L. Wilson of Elizabeth; treasurer, George H. Olcott of East Orange; Chairman of Council, M. N. Baker of Montclair.

Agitating Mrs. Maybrick's Release from an English Prison.—In view of the fact that American women have been appealed to by Lady Randolph Churchill to assist in raising funds for the equipment of the hospital ship "Maine," the Woman's Committee of the New York Medico-Legal Society has addressed a letter to Lady Churchill asking her to seize upon the present good will and friendly obligations to urge upon the Home Secretary of England the release of Mrs. Maybrick. This American woman, it will be remembered, is now undergoing a prolonged imprisonment for the alleged murder of her husband.

Spain Left Off the Map.—It seems evident that the plague scare has upset the geographical equilibrium of our estimable contemporary the *New York Medical Journal*. In an editorial of the issue of the 18th of November, referring to a hygienic crusade against various insect-pests, they make the following interesting comment on the local geography of France and Portugal; "If the appearance of the plague on the frontier between France and Portugal leads to the destruction," etc. It may be that Spain has been lost from the map in the estimation of the editor, since our recent Cuban episode.

Contributions to the Hospital Ship "Maine."—Money continues to pour in in the most gratifying manner for the American Ladies' Hospital Ship the "Maine." One generous friend of the enterprise who refused to allow his name to be made public gave \$25,000 in a single donation this week, and has promised another subscription of the same amount if the committee ultimately find it to be necessary. For some reason the Irish Transvaal Committee for the equally creditable purpose of providing an ambulance for the Boer wounded does not seem to be meeting with the same success, as its list of contributions reaches so far the easily invested total of \$300.

Professor Virchow's Jubilee.—The fiftieth anniversary of Virchow's labors as Professor Ordinarius in the University of Berlin was celebrated in the hall of the Pathological Museum, which was constructed through his efforts. There was no banquet or similar social function but the Senate of the University presented to the revered and honored professor an illuminated and illustrated address, the text of which was written by Professor Waldeyer. Virchow's wonderful achievements as scientist, archeologist, and politician were recounted therein in flattering terms. Professor Virchow is now in his seventy-eighth year, and, in spite of fatigues of the celebration, participated during the evening in a learned discussion on organotherapy.

Dr. Kendrick Really Dead.—Dr. William H. Kendrick, a personal friend of Abraham Lincoln, was buried in Crown Hill Cemetery near Indianapolis on December 1st, after his family had made a careful examination to prove

that he was dead. Once before his body was prepared for burial but he revived. He was called to Washington in the Civil War at the request of President Lincoln and took a place in the army medical staff. He was stricken with pneumonia while in Washington, and after a brief illness was pronounced dead. The body was shrouded and was about to be shipped to his home when he suddenly returned to life. Dr. Kendrick was an eclectic physician and was formerly connected with the Chicago Eclectic Medical College.

Decrease in the Mortality from Consumption.—In the report for 1898 of the Massachusetts Board of Health a steady and uniform decrease in the mortality from consumption in that State is pointed out. In 1853 the deaths from it were 4272 per million people. In 1895 the number was only 2194, and the report for 1898 shows further decrease. The causes of this remarkable change, states the report, are of a similar character with those which have affected nearly the entire class of infectious or preventable diseases—namely, a better knowledge of the art of prolonging life, a growing appreciation of the value of sanitary measures, and the more rigorous enforcement of those measures which are essential to success in the campaign against infectious diseases. Another means which has recently been adopted in Massachusetts is the establishment of a special State hospital for the isolation and treatment of persons afflicted with tuberculosis.

More Medical Officers in the United States Army.—Surgeon-General Sternberg has prepared a bill for presentation to Congress providing for an increase of men in the Medical Department of the Army. This increase is necessitated by the expansion in the military organization. The bill provides for an addition to the present corps of four assistant surgeon-generals with the rank of colonel; ten deputy surgeon-generals with the rank of lieutenant-colonel; thirty surgeons with the rank of major; and eighty assistant-surgeons with the rank of lieutenant, who will have the rank of captain at the expiration of five-years' service. These positions are to be filled by seniority promotion in accordance with the established laws and regulations. Acting assistant-surgeons to the number authorized are to be appointed subject to the usual examination for a probationary period of six months, during which they will attend the Army Medical School in Washington. At the end of this time if their standing is satisfactory they will be commissioned to fill existing vacancies.

An Energetic University.—Johns Hopkins of Baltimore has demonstrated recently that not only in science but also in the every-day emergencies of life that its professors are ready, even to the exigencies of fighting fire. On the 4th of this month a fire was discovered in the chemical laboratory of the university. The fire was just beneath the private office of Professor Morse on the third floor. It spread quickly and a series of small explosions in different parts of the building made the firemen a little timid about venturing into unknown quarters. Dr. Gilpin, an associate in the chemical department, proved of

great assistance to the chief in locating the really dangerous places and reassuring the men about the others. Just as President Gilman arrived upon the scene there were cries of warning as to the danger to be apprehended from the sodium in the laboratory. The disquieting explosive was ultimately removed by the colored janitor, who braved flames and danger and staggered out with the bottles in his arms. When Professor Ira Remsen arrived he was provided with a fireman's outfit—rubber coat, helmet, boots and all—and, with Chief McAfee, made a survey of the building. Dr. Harmon Morse followed Dr. Remsen to the scene, and was likewise fitted out by the chief. Both were of much assistance to the firemen.

Competition for the Senn Medal.—At the meeting of the Surgical Section of the American Medical Association, held June 4, 1897, Dr. Nicholas Senn offered to donate annually a gold medal of the value of \$100 for the purpose of stimulating surgical research. The offer was accepted. The committee for this year, consisting of Drs. W. L. Rodman of Philadelphia, A. J. Ochsner of Chicago, and H. Horace Grant of Louisville, desire to direct attention to the following conditions governing the competition: (1) A gold medal of suitable design is to be conferred upon the member of the American Medical Association who shall present the best essay upon some surgical subject. (2) This medal will be known as the Nicholas Senn Prize Medal. (3) The award shall be made under the following conditions: All successful essays become the property of the association. The medal shall be conferred and honorable mention made of the two other essays considered worthy of this distinction at a general meeting of the association. The competition is to be confined to those who at the time of entering the competition, as well as at the time of conferring the medal shall be members of the American Medical Association. The competition for the medal will be closed three months before the next annual meeting of the American Medical Association, and no essays will be received after March 1, 1900. All communications should be addressed to Dr. W. L. Rodman, Chairman, 1626 Spruce street, Philadelphia.

MEDICAL MATTERS IN NEW YORK.

THE SUICIDE OF DR. LOCKWOOD—THE DEATH OF DR. STEWART B. CARLISLE—REMARKABLE CASE OF BROKEN NECK—STATIC ELECTRICITY AS A REMEDY FOR TUBERCULOSIS—FOUR DEATHS FROM ILLUMINATING GAS—CRITICISMS BY THE CORONER'S OFFICE—ANNIVERSARY OF THE PRESBYTERIAN HOSPITAL—THE NEW YORK EXCHANGE FOR WOMEN'S WORK—AN ODD CAUSE OF DEATH—FOR CHARITY CONSOLIDATION—THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR—THE RECENT BICYCLE RACE.

DR. WILLIAM A. LOCKWOOD committed suicide recently at his lodgings in the borough of Brooklyn by swallowing carbolic acid. Dr. Lockwood was born in Norwalk, Conn., and was a member of the well-known family of that name whose ancestry dates back to the founding of that city. He was at one time a leading

physician of his native town. He served for a time upon the visiting staff at Bellevue Hospital, resigning for the purpose of visiting Paris to study in the hospitals there.

Dr. Stewart B. Carlisle, living at Mt. Vernon, died in the Harlem Hospital December 8th of heart disease. Dr. Carlisle was found upon the street in an unconscious condition by a policeman, and was removed to the hospital. Dr. Carlisle was a graduate of Bellevue Medical School, Class of 1881; he was member of the Westchester County Society, and was attending physician to the Mt. Vernon Hospital.

A man dragged himself into St. Joseph's Hospital, Yonkers, recently, and asked to be admitted. He gave the history that he was sixty-five years of age, and had fallen from a scaffold five weeks before and had broken his neck. Directly after the accident he was taken to his boarding-house where a physician put his neck and head into a plaster cast. He was unconscious for two weeks and on recovering, perceiving that he suffered no pain, he dismissed the doctor. Upon examination it was discovered that the patient's left leg was paralyzed but hypersensitive to touch, while the right side was without feeling but retained the power of locomotion. The X-ray examination disclosed a fracture of the vertebra with displacement, one fragment pressing upon the spinal cord.

The medical staff of St. Luke's Hospital are watching with scientific interest a series of experiments in the application of static electricity in the treatment of phthisis. It has been the plan of the physicians not to allow any knowledge of these experiments to reach the outside world until they were able to report definite results. The experiments are being conducted by Professor Francisque Crotte, and the medical staff are acting as a jury. Careful temperature records are being kept and the sputum of the patients is being examined at stated intervals at the laboratory of the New York Board of Health. The method of applying electricity is by passing sparks through sponges saturated with formic aldehyde which are applied to the patient's chest.

Two more cases of accidental death due to failure to turn off the gas have recently occurred in New York; two people were involved in each instance, making in all four deaths.

Criticism of this city's physicians by medical representatives of the Coroner's office are "rather rife just now." The latest is that of Coroner's Physician O'Hanlon to the effect that the injuries of a patient at the Presbyterian Hospital had been diagnosed simply as fractured collar-bone. Dr. O'Hanlon found on autopsy that in addition to that injury a number of ribs had been broken, and he "expressed great indignation over the failure of the hospital physicians to discover the man's worst injuries." As a matter of fact the physicians at the Presbyterian Hospital had made themselves thoroughly acquainted with all the patient's injuries.

The thirty-fifth anniversary of the founding of the Presbyterian Hospital was celebrated December 9th with exercises in the dispensary of the institution. According to custom on the celebration of anniversaries the entire

hospital was thrown open to the inspection of visitors. After a musical programme by the choir of the Central Church, Dr. Donald Sage Mackey made a short address, in which he referred to the part hospitals had taken in the advance of medicine. Fully two hundred visitors inspected the various wards, operating rooms, and laboratories.

The New York Exchange for Women's Work calls attention to its Domestic Department which will furnish all kinds of home-made delicacies for the sick at short notice. The Exchange is a charitable institution designed to help educated women in reduced circumstances, and is supported by voluntary contributions. Orders for invalids sent here are not only well filled, but the physicians who patronize the exchange will be assisting one of our most worthy charities. The Exchange is at 334 Madison avenue, corner of Forty-third street. The telephone number is 1226 Thirty-eighth street.

Mrs. Katherine Keifer died in St. Peter's Hospital in Brooklyn on December 1st after a two-weeks illness, during which her physicians were greatly puzzled. On autopsy a short piece of fine wire was found to have punctured one of her lungs. Just before her illness Mrs. Keifer swallowed a large piece of bread accidentally, and suffered great pain in doing so. The X-rays had been used, but without result.

Leading charity experts of this city are conferring for the purpose of ascertaining whether a large number of charities cannot be consolidated. It has been found that much money has been wasted owing to the duplication of such work. The chief complaints have come from the medical charities, especially the dispensaries, which have been freely criticised of late years as being little better than pauperizers. Theodore Sutro, Esq., President of the Medical and Legal Relief Society, is working for consolidation.

The fifty-sixth annual report of the New York Association for Improving the Condition of the Poor has just been issued. The Department of Relief expended \$27,000 in relieving 28,020 people. The necessity of new homes for the aged and of hospitals and homes for consumptives is stated. The fresh air work of the association was exceptionally successful last summer. Fifteen thousand three hundred and seventeen people were taken on the day excursions, of which there were five each week. One thousand four hundred and ninety women, children, and babies were kept at Sea Breeze, the association's summer home on Coney Island, for an average stay of ten days each. One hundred and twenty thousand, three hundred and forty-seven baths were given at No. 9 Center Market Place. The success of these baths demonstrates the possibility of inculcating habits of cleanliness in the most densely populated parts of the city.

Many of the objectionable features that have characterized the previous six-day bicycle races were successfully eliminated from the recent contest at the Madison Square Garden. The improvement was due to the enforcement of the regulation that no contestant was allowed on the track for more than twelve hours out of twenty-four. The result has been a much more satisfactory and exciting

contest than before and popular interest was kept at the highest pitch by the closeness of the score. The sport itself has been in reality benefited by the very humane modification introduced. The management must realize that what makes for humaner methods will always increase popularity in the end. There is one more suggestion that might be adopted with advantage. It is that the untrained, or those in poor condition, should not be allowed to enter such contests. At the beginning of the recent race some unfortunate things occurred seemingly from a neglect of this precaution, and erratic mental symptoms were manifest in more than one of the contestants. The problem of providing properly for such exclusion is perhaps a difficult one, but it is a task well worth the managers' careful attention, not alone from the higher motives of humanity but even from the more sordid reasons of added popularity for the sport and consequently increased monetary returns.

MEDICAL MATTERS IN PHILADELPHIA.

[From Our Special Correspondent.]

THE TROPICAL DISEASES OF THE PHILIPPINE ISLANDS—A \$2,000,000 HOME FOR CRIPPLED CHILDREN—THE THOMAS HOGE MEMORIAL WARD OF THE PRESBYTERIAN HOSPITAL—DEATH FROM FREE SAMPLES OF A PATENT MEDICINE—HEALTH REPORT FOR THE CURRENT WEEK.

PHILADELPHIA, December 9, 1899.

AT the last meeting of the College of Physicians of Philadelphia, held December 6th. Dr. Simon Flexner gave an interesting talk on "The Medical Aspect in the Philippine Islands," detailing his impressions gained last summer in the Philippines, whence he was sent, as a representative of the Johns Hopkins Hospital, to investigate certain phases of tropical diseases. Arriving in Manila in May, 1899, Dr. Flexner was enabled, through the permission of the Government and through the courtesies of the army medical officers, to very satisfactorily pursue the study of various tropical affections in patients in the various military and civil hospitals of that city. Leprosy, beri-beri, tuberculosis, and amebic dysentery were found to be the most prevalent diseases. Leprosy was studied in the local leper hospital, containing about one hundred beds, and also among the Filipino prisoners at Cavite. The latter were confined in two enormous corridors, which were unlighted and unventilated, and provided adequate accommodations for not more than 100 persons, while, as a matter of fact, no less than 1200 were here confined. Two hundred cases of beri-beri developed within a few days, with a consequent mortality of about 40 per cent., the several types of this disease, the edematous, the atrophic, and the general, being observed. Clinically, no undescribed manifestations were noted; and although particular efforts were made to determine the specific cause of the disease, by approved pathologic methods, nothing definite along this line of research was accomplished, except the proof that beri-beri is not due to infection with any specific form of streptococcus. Cases in which the micro-organisms were found were undoubtedly secondarily affected. Tuberculosis is very common

among the natives, and also various cutaneous diseases, scabies in particular; it is known as "washer woman's itch," and is transmitted through the medium of undergarments which have not been boiled in the laundry.

In the study of Americans suffering from various diseases the Spanish hospital, the capacity of which was increased so that 1200 patients could be accommodated, and also three reserve hospitals, chiefly for convalescents, were visited in quest of clinical material. There was found to be far less malarial fever than newspaper accounts would lead one to suppose, although instances of all types of this disease were observed. Enteric fever was also far less extensive than is popularly imagined. Dysentery was by far the most serious disorder which prevailed in the islands, some cases proving fatal in from 24 to 48 hours, while others, chronic and destructive to the patient's health and strength, dragged along a course lasting for many weeks. The complication of hepatic abscess was common. Post-mortem examinations in many cases showed that severe intestinal lesions were commonly caused by the infection, in extreme instances the mucous membranes of the large, and part of the small intestine being apparently almost wholly destroyed, and utterly unlike the bowel structure. The diphtheritic form was not common, but the amebic form was. The ameba coli were found in many cases of dysentery, as well as in individuals who did not have this disease, so that, from this fact, it is evident that the significance of the ameba as the specific cause was partially lost. By means of a careful bacteriologic study of a number of cases, Dr. Flexner believed that he could isolate a single organism, cultivated on blood-serum, as pathogenic for the disease, and to this organism was attributed a more important etiologic significance than the ameba. The organism in question resembled the typhoid bacillus rather than the colon bacillus, but differed from both, the exact points of dissimilarity being at the present time the subject of more extended laboratory investigation. It was further stated that the lesions of the intestine, and the liver complications produced by this organism were identical or very similar to those caused by ameba infection.

At the same meeting Dr. Louis F. Atlee, late surgeon of the "Olympia," gave an interesting account of his experiences with the several diseases most commonly seen in the Philippines. Tuberculosis, leprosy, beri-beri, smallpox, erysipelas, cutaneous disorders, and an anomalous form of the continued fever, came under his observation with particular frequency, and were discussed from various standpoints. The climatic conditions of the islands were thought to be particularly enervating, both to the ill and to the normal individual. The climate was responsible for much of the mental inactivity and incapacity for physical exertion, both of the natives and of the newcomers. Its effect upon European women was regarded as especially deleterious, as shown by disturbances of menstruation, by the frequency of miscarriages, and by the large percentages of births of poorly nourished children among this class of the population.

P. A. B. Widener, the tramway magnate, has signi-

fied his intention of erecting and endowing the hospital and home for crippled children in this city, at an estimated total cost of \$2,000,000. The proposed institution, to be known as the Widener Industrial Home for Crippled Children, will have for its objects not only the medical and surgical care of its inmates, but also their training in common-school branches of learning, and in such industrial trades which will enable them to become partially or wholly self-supporting. Ground within the city limits has already been purchased, and the erection of the buildings of the institution will be begun as soon as the existing legal formalities are removed by Councils, making it possible to permanently improve the tract of land chosen by the donor.

The Thomas Hoge Memorial Ward of the Presbyterian Hospital was formally opened on the afternoon of December 9th, the principal speakers on this occasion being the President of the Hospital, the Rev. Dr. Chas. A. Dickey, and Dr. S. Weir Mitchell, to whom the direction of the new ward has been entrusted. This addition to the Presbyterian Hospital's already extensive collection of buildings is expressly intended for the treatment of nervous diseases, especially among that large class of the community, the "half poor," for whom special accommodations are provided, enabling them to receive the rest cure, and other elaborate and ordinarily costly modes of treatment, at an expense to the patients, commensurate with their means. The ward is unendowed so that its future patients are expected to pay a moderate sum for treatment.

The coroner is at present investigating the cause of a death of a twelve-year-old girl, who is reported to have succumbed last week to the effects of having eaten a number of patent pills, samples of which have been recently strewn about the city as an advertisement of the nostrum. If the results of the investigation justify present suspicions, the enterprising manufacturers of these deadly sugar-coated pellets will be prosecuted; and a halt called on this promiscuous distribution of quack medicines, which lately has become so prevalent a nuisance here.

During the week ending December 9th, the number of deaths reported in this city was 412, being an increase of 2 over those of last week, and a decrease of 24 compared to the number reported in the corresponding week of 1898. The following report of contagious disease was made: Diphtheria, 157 new cases, 23 deaths; enteric fever, 43 new cases, 8 deaths; and scarlet fever, 55 new cases, 3 deaths.

Salicylic Acid Administered through the Skin.—If mixed with an oily vehicle it is quickly absorbed. It may be prescribed thus in connection with its internal administration for rheumatism. Oil of wintergreen may be used instead with advantage.

R	Ac. salicyl.	3 iiss
	Spiritus	3 iss
	Ol. ricini	3 iii.

M. Sig. Rub into affected part, covering first with an impervious material then with flannel or cotton wool.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

THE SURRENDER OF LEICESTER—NO NEWS, GOOD NEWS FROM SOUTH AFRICA—SUCCESS OF CONCERT IN AID OF AMERICAN HOSPITAL SHIP—SMALLPOX SPREADING AT HULL—SULPHUR AND BLUE VITRIOL AS FOOD—COSMETICS—ACROMEGALIC GIANT AT POLYCLINIC—REPORT OF COUNCIL OF ROYAL COLLEGE OF SURGEONS BY ANNUAL MEETING—MEDICAL SUPPLIES FOR TRANSVAAL FROM FRENCH, GERMAN, AND ITALIAN RED-CROSS SOCIETIES—QUACKS BROUGHT TO JUSTICE—MEDICAL MAYORS — HALF AS MANY CHILDREN AS YEARS OF AGE.

LONDON, December 2, 1899.

CIVILIZATION has triumphed in Leicester. As predicted in our last letter, the Board of Guardians, after posing as Ajax defying the thunderbolts, for nearly five months, has surrendered, and by a vote of 29 to 9 rescinded its resolution not to appoint a vaccination officer. It was a remarkable tribute to the power of chivalry even among the Philistines, for as long as the Joan of Arc of the Board stood firm the rebellious majority hung together, but when Miss Ellis weakened the rank and file were only too glad to follow her. The appointment of an officer was then agreed to by a vote of 27 to 19.

The medical news from the front this week seems to have shared in the general slackness and inactivity of all the operations during the lull before the forward movement. The former reports of the extraordinarily low mortality and freedom from complications of the wounds made by the Mauser bullets still continue to be confirmed in a most gratifying manner. One man is actually reported to have been shot completely through the head, the ball entering at one temple and going out at the other, and yet to be convalescing, and the proportion of the wounded who have died within the past four weeks stands at the very low figure of less than four per cent. The troops continue remarkably free from either typhoid or dysentery, and nearly all private correspondents describe the situation practically in the graphic phrase of an officer writing home to his sister, "The climate and surroundings are beastly but healthy."

The concert at Claridge's Hotel this week on behalf of the American Ladies' Hospital-ship was a brilliant success. Half the social lions of the hour, from the Prince of Wales to Miss Edna May, were present, and the net proceeds were something like \$8000, which brings the fund to within a few thousand dollars of the amount estimated as required. Much sympathy is of course being expressed with the distressing position of the president of the association, Lady Randolph Churchill, who, just on the eve of her departure for South Africa, which it is an open secret was mainly to bring her nearer to her only son, Mr. Winston Churchill, has received the news that he is wounded and a prisoner in the hands of the Boers.

The smallpox epidemic at Hull still continues slowly but obstinately to persist and spread in a most annoying manner. The new smallpox hospital is being rapidly

filled by fresh cases, one of which has actually developed in a prisoner confined in the jail. This starts a new focus for possible spread of the infection.

The committee of the Local Government Board on the use of preservatives and coloring matters in food, has again commenced its sessions under the presidency of Sir Herbert Maxwell, M.P. Representatives of the trade called before them frankly admitted that various matters were used purely for the preservation or even simply for the beautifying and rendering more attractive to the eye of articles of diet. The use of sulphur in the bleaching of raisins, plums, and apricots, which is so widespread on our own California-fruit farms, was defended on the ground that it greatly improved the appearance and the flavor of the fruit without in any way detracting from its digestibility, although one of the witnesses admitted that sometimes in the case of plums a trace of it was distinguishable to the palate. The same useful bleaching substance is used in the French bottled mushrooms, of which it is actually alleged to improve the taste. More serious was the admission that all green preserved vegetables have their color fixed by sulphate of copper, especially in the case of peas, beans, and spinach, vegetable coloring having been tried and failed, and the dealers frankly declare that the products were unsalable without this fresh green tint. They have actually attempted to introduce the uncolored vegetables at various clubs and restaurants, with the result that although the proprietors and managers are anxious to use them, customers to whom they were served sent them back to the kitchen. This is not a pleasant state of affairs, and it is the duty of the profession to educate the public up to the dangers involved and the foolishness of insisting upon having food material that is pleasant to the eye no matter what the risk. The sulphur-bleached dried fruits, while probably in no way poisonous, are leathery to a most indigestible degree, and while, of course, the amount of sulphate of copper used in the coloring of green vegetables is probably not sufficient to produce toxic effects, yet there is no telling what cumulative results may ultimately develop from prolonged use of such "blue-vitriol" goods.

A most unusual case was presented at the surgical clinic of the Medical Graduates' College this week through the kindness of Dr. Macnamara. This was an Egyptian giant alleged to be seven feet eleven inches in height, and looking every inch of it. Like nearly all these prodigies who exhibit themselves before the public, as he had done with Barnum and Bailey for the past year, he declined to submit to exact measurements, alleging in broken English that he thought it was unlucky, possibly with a fear that, as the Irish superstition has it, he would not grow any more afterward. But by checking off his height against a high door-post and measuring the result, it seemed positive that he was about seven feet two inches. His legs and arms were both enormously long, the crest of the ilium reaching to the shoulder of a man of average height. His cranium was in no way above the average size, while his jaws were large and his hands and feet enormous. Thus there would appear to be at least a suspicion of an acromegalic element in his

giantism. His general health, however, was excellent, and he presented no other abnormality whatever with the exception of a large cystic tumor in the front of the neck, which was regarded by his physician as probably a hygroma or congenital cyst. He is only twenty-three years of age, and we wish him a long life and much fame, but it is to be hoped that when he joins the majority an examination of his pituitary body and fossa will be able to be secured.

The formal annual meeting of the Fellows and Members of the Royal College of Surgeons has been held, and, as was expected, proceeded to take some decidedly vigorous action, condemning the Council for its refusal to include in the application for the new charter a clause granting some form of representation at its Board to the members of the College. After a vigorous discussion this resolution of regret and request for amendment was passed by the large majority of 42 to 6. But as the Council is as independent of the annual meeting and its wishes as is the General Medical Council of those of the British Medical Association, we fear there is little likelihood of this reprimand producing any effect. Besides, it must in fairness be admitted that while the demand of the members is an eminently just and moderate one, yet the fact, that out of their thousands only forty-two thought it worth while to attend the meeting, would scarcely seem to indicate that the mass of them are very seriously concerned about their disfranchisement. At least, so we fear, will these figures be regarded and used by the Council.

Another gratifying instance of the way in which nations, however hostile otherwise, can unite in the humanities of medicine is furnished by the recent donation of large quantities of equipment and supplies for the British wounded in the Transvaal, from the French, German, and the Italian Red-Cross Societies. The former has already offered complete equipment for two field hospitals to the English authorities, and this has been gratefully accepted. This is one of the memories of Sedan which brings nothing but pleasantness with it, and it is doubtless connected in some degree with the appointment of Sir William MacCormac, who was the general director of the Red-Cross forces in that campaign.

The law has a curious way in England of insisting upon being obeyed even by quacks. Another case against the vendors of an abortifacient remedy, a faint shadow of the celebrated Chimes Brothers' affair of a year ago, is now being tried in one of the higher courts. The concern entitles itself "The Herbal Institute," and its methods were the familiar ones, the original departure being that of vending its nostrums from house to house by women agents dressed as hospital nurses, which was a distinctly ingenious ruse. The evidence seems sufficient to render conviction of all five of the defendants highly probable.

The rôle played by the profession in civic and political life in this country is steadily increasing. In the late municipal elections no less than thirteen towns in England and Wales elected medical men as mayors, two or three of the most prominent members of the admirable London

County Council are physicians, and the profession is well represented in the House of Commons.

A suggestive illustration of one of the secrets of the inexhaustible colonizing powers of England is afforded in rather a mournful manner this week by the death of a Welsh collier who could actually count half as many children as he could years of life, twenty-two and forty-four respectively. Larger families than this have, of course, been frequently reported, but we doubt if a similar proportion at an earlier age has as yet been placed on record. The poor fellow was found drowned in a pond, and he was stated to have been much depressed for some time previously, though whether the size of his group of progeny had anything to do with his depression was not stated.

SOCIETY PROCEEDINGS.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Proceedings of the Twelfth Annual Meeting, Held at New Orleans, La., December 5, 6, and 7, 1899.

DECEMBER 5.—FIRST DAY.—MORNING SESSION.

THE Association met at the St. Charles Hotel, and was called to order by the President, DR. JOSEPH TABER JOHNSON of Washington, D. C.

An Address of Welcome was delivered by DR. HENRY DICKSON BRUNS on behalf of the local profession, which was responded to by PRESIDENT JOHNSON.

DR. ERNEST S. LEWIS, Chairman of the Local Committee of Arrangements, made a brief report of the work of the Association.

The first paper read was by DR. A. M. CARTLEDGE of Louisville, Ky., entitled

MYOMATOUS TUMOR OF THE EXTERNAL ILIAC VEIN, WITH REPORT OF A CASE.

Myomatous tumors arising from the muscular coat of veins constitute one of the rarest of pathological curiosities, as a faithful search of the literature by the essayist discovered but two reported cases. A brief account of these was given. His own case occurred in a woman, aged fifty-three years. Five years ago the patient suffered from swelling of the left limb, extending from foot to hip; it came on gradually, and the limb attained a considerable size; the swelling subsided in eight or ten months. She had pain at this time in the left iliac region. No enlargement was noticed. Two years ago the patient noticed a small lump just above Poupart's ligament on the left side, from which she suffered some pain. Within the last year pain has been much greater in the left iliac region, enlargement more distinct and very hard; latterly she lost much flesh; slept poorly on account of pain, and also suffered from accumulations of gas in the bowels. A diagnosis of carcinoma of the deep inguinal glands above Poupart's ligament was made. Exploration of the iliac tumor was advised for a more positive diagnosis, and removal if found expedient. This was accepted, and the operation performed on March 9, 1899.

Operation consisted of an incision beginning near the external abdominal ring, and running one inch above and parallel with Poupart's ligament, five inches in length, which came in contact with the tumor after opening the fascia of the external oblique muscle. The anterior part of the tumor occupied the inguinal canal; the round ligament was easily identified in front of the tumor occupying the most fantastic relation to it, wound as it was in and out around several lobules of the tumor; it was separated easily and pushed to the inner side. By blunt dissection it was gradually freed from its upper and lower and external bed. The outer and deeper attachments were approached with great concern, as they were evidently in the closest relation with the external iliac vessels. Gentle and careful blunt dissection carried the pelvic peritoneum upward, no button-holing of the same occurring. After reaching the base and upper and outer part of the growth the external iliac artery could be plainly felt entering the tumor. Search to the inner and posterior aspect of the artery failed to demonstrate definitely the vein, nothing more than a fibrous thickening could be made out, which was lost in the tumor substance. The tumor was separated from above downward, the deepest projection being disembedded from the obturator foramen; it now remained only attached to the vein and artery beneath Poupart's ligament. These were freed from the surrounding structures by blunt dissection, and were ligated separately and the tumor removed. In cutting the vein below where it entered the growth it was manifest that its lumen was almost obliterated, barely admitting a good-sized needle. The tumor was removed entire, and passing through it and removed with it was one and three-quarter inches of the external iliac artery, and the same length of the nearly obliterated vein. The only hemorrhage of any account was from the obturator vein where it passes through the foramen; this was easily secured by ligation. The upper portion of the incision was closed by tier sutures, the lower portion left open and drained with gauze. Patient is progressing toward recovery.

DR. WILLIAM E. PARKER of New Orleans referred to the difficulty of diagnosing tumors below the groin.

DR. J. WESLEY BOVEE of Washington, D. C., followed with a paper, entitled

URETERECTOMY.

He said that surgery of the kidney was practically of recent date, and surgery of the ureter was the logical sequence to renal surgery. The paper considered essentially the subject of ureterectomy, an operation less than nine years old, one seldom indicated, but offering brilliant results. Dr. Bovee reported the following case:

Mr. J. J. T., forty-eight years of age, was first seen with Dr. E. Reisinger of Washington in August, 1898. Three years previously his left kidney had been removed for a renal abscess, and subsequently another operation had been done by the same surgeon for the remaining pus tracts and for severe localized pain. He had never been without pain, and was frequently obliged to resort to the use of morphin. The patient was in a very much

enfeebled condition, pulse ranging from 110 to 130, and his temperature from 99° F. to 101.6° F. On the left anterior and lateral aspects of the abdomen, slightly below the level of the umbilicus, were two scars of the previous operations. A large hernia had occurred. There were three sinus tracts in the left lumbar region discharging thin, watery pus. In spite of the general weakness of the patient an exploratory operation was advised, which was done on August 17, 1898, with the assistance of D. Reisinger. By careful dissection and holding probes in the fistulae the former location of the kidney was reached. Instead of the kidney a large amount of adipose tissue, containing many pus tracts and calculi and much cicatricial tissue, was found, and a little below it the upper end of the ureter surrounded by calculi and thickened pus. The ureter was about one inch in diameter, and filled with cheesy pus and calculi. Dr. Bovee resolved to remove the duct, and immediately extended the incision to the inguinal canal, keeping about one inch from Poupart's ligament. With considerable difficulty, but with very slight loss of blood, the ureter, in pieces, was removed to the bladder wall. The distended lumen ended abruptly about half an inch from the bladder-wall, this portion being a solid cord. The wound was closed with through and through silkworm-gut sutures, a strip of iodoform gauze being passed to the lowest point of the pelvic wound and brought out at the lower end of the external incision, and another strip in the space formerly occupied by the kidney. The unusual atmospheric high temperature and humidity probably assisted in producing a fatal issue seventeen hours later.

DR. SAMUEL E. MILLIKEN of Dallas, Texas, called attention to a point in technic adopted by Kelly, namely, instead of making one incision he leaves a bridge of abdominal wall, making the first incision from the twelfth rib down to the crest of the ilium in front of the lumbar muscles, with a second incision along the inguinal region. This enables the operator to expose the kidney, to make a thorough examination, and also to trace the ureter.

DR. BOVEE, in reply to Dr. Milliken, said there might be the advantage in two short incisions by having a less amount of tissue to cut across, as muscles, fascia, etc., over one large one, but he thought there was a drawback in having to dissect through a smaller space to loosen the ureter between the two incisions. Such an operation would require more time which, in many instances, is a precious element. However, he was not disposed to criticize Dr. Kelly's method because he had never tried it.

SERIOUS COMPLICATIONS FOLLOWING PASSAGE OF THE URETHRAL SOUND.

DR. WILLIAM E. PARKER of New Orleans read a paper with this title. He reported the case of a man with stricture of the urethra who passed urine with difficulty. The first time a sound was passed he had a chill, with a temperature of 105° F. After a week the sound was passed again, with no fever having occurred between the days of passage of the sound. In the meantime, the man's urine was examined, with a report showing the specific gravity to be 1020, half per cent. of albumin, no

casts nor pus, and acid reaction. After the passage of the sound the second time the man had a urethral chill, suppression of urine, and died with uremic convulsions the following day, that is, the second day after the passage of the sound, although the usual precautions had been taken to prevent urethral chill. The autopsy showed that there was intense congestion of both kidneys, with pus in the pelvis, and in the calices of the left kidney.

DR. WM. P. NICHOLSON of Atlanta had seen a number of cases of severe chill following the introduction of sounds where all the necessary precautions had been taken. He had observed six cases of swelled testicle following the introduction of the sound, but had not seen a fatal case. In a book on the "Calamities of Surgery," Sir James Paget mentioned a case where the introduction of the catheter caused suppression of urine and death of the patient. The experience of genito-urinary surgeons would show, no matter how careful they were in sterilizing instruments, etc., in many cases the apparent nervous connection between the organs would produce a severe chill, and, in some cases, suppression of urine.

DR. W. F. PARHAM of New Orleans believed that post-mortem examinations would show, in cases where death had occurred after the passage of the urethral sound or catheter, some form of nephritic trouble, usually the interstitial. He recalled the case of a man upon whom he had operated for strangulated hernia, who had given no history of any renal trouble, yet the patient died of interstitial nephritis, as verified by an autopsy.

DR. MANNING SIMONS of Charleston, S. C., said he had met with a number of cases in which the passage of the sound was followed by trouble. It is his routine practice, when a man presents himself for the first time, in whom he has to pass the sound, to administer a grain of opium, and 10 grains of quinin immediately after its passage as a prophylactic measure against urethral chill and fever. He thought the cases should be divided into three classes. First, those in which the trouble is reflex from the nervous system; second, those in which urethritis is set up by unclean sounds, and, third, those in which there is serious disease of the kidney, but not discovered, preceding the use of sounds.

DR. J. D. BLOOM of New Orleans narrated two fatal cases from the passage of the sound in New Orleans, and these showed kidney lesions post-mortem.

DR. F. W. MCRAE of Atlanta reported a fatal case which occurred in the practice of the elder Westmoreland while the speaker was a medical student. He had seen complications follow the introduction of the sound. During the last five or six years he had not introduced a sound, except in the direst emergency, without having the patient under observation for several days thereafter. His results had been better since paying particular attention to careful preparation of the patient, instruments, repeated examinations of the urine, etc.

GUNSHOT WOUNDS OF THE ABDOMEN.

DR. H. H. GRANT of Louisville, Ky., read this paper. He said that the surgery of gunshot wounds of the abdo-

men, which had been for some years pretty well settled to the satisfaction of the profession, received something of a shock by the report of the surgeons who served in the late war with Spain. (*Journal American Med. Association*, July 11, 1898.) Though these reports, which were made by men of experience and high reputation on the subject, were modified to bear especially on the wounds received in battle, yet the inferences, and indeed the conclusions, affected surgical judgment to a considerable degree. The results of the investigation of Klemm show in an analysis of 152 cases that in nearly all of those in whom penetrating wounds of the abdomen were established, who did not die of immediate effects, eventually succumbed to exhaustion from sepsis, and later from suppuration. The meaning of this was that, practically speaking, all penetrating gunshot wounds of the abdomen, untreated by surgical repair of the lesion, die either of hemorrhage, peritonitis, or sepsis. The mortality after operations done in the first seven hours after injury is fifty-two per cent., as against sixty-four per cent. for operations at all periods. But a study of the tables of Parker shows such variations in the mortality succeeding complicated and uncomplicated wounds of the various viscera, all of a fatal character without operation, as to indicate that in uncomplicated wounds in some situations the early operator will save from seventy-five to eighty per cent. of what would otherwise be fatal cases. His tables also show that of 16 operations done, in which no intraperitoneal injury was found, but 3 died, 1 from an overlooked perforation and 2 from peritonitis, due to infected blood-clot, a fatal complication upon which Klemm lays so much stress.

Dr. Grant sent out a circular-letter to 100 prominent surgeons, and an analysis of the reports developed a number of most important and interesting facts. The mortality in the whole number of operators was about fifty-two per cent., an indication that the prognosis is improving with the more energetic measures of treatment. The practical management of suspected penetrating wounds is as plain a duty as the tying of a bleeding artery. As soon as possible after the injury the patient should be transported to a suitable place, and, under aseptic precautions the experienced hand should carefully trace the course of the bullet into the cavity. This is easy enough when the penetration is direct from the abdominal wall, but often difficult or impossible when from behind or from the thoracic or pelvic cavity. Under these latter circumstances the history of the direction of the projectile, and the general symptoms must be the guide, driving to the side of operation the benefit of the doubt.

DR. HUGH M. TAYLOR of Richmond, Va., said he had operated on three cases of gunshot wounds of the abdomen within the last two or three years. He laid stress on the utter hopelessness of cases until an operation was done. Of course, he was aware that arguments had been advanced by good men against surgical interference in many cases. It is not always easy to satisfy the attending physician, in the absence of serious symptoms, that an exploratory incision is imperative. Of the three cases narrated by him, one was saved.

DR. WILLIAM E. PARKER was glad to note that the percentage of recoveries from operative interference in gunshot wounds of the abdomen is improving. Cases occurring in civil life should be operated on as soon as possible. In military life he had taken the stand that with the modern small-calibered bullet, as many cases would get well without operation in the field as with it. He mentioned a case operated on by the late Dr. Miles in which there were fourteen intestinal perforations, which were closed, and the patient recovered.

DR. MANNING SIMONS had operated on twenty cases of gunshot wounds of the abdomen by laparotomy, and of this number he saved three. One was a gunshot wound of the stomach, the operating having been done within a few hours after the occurrence. There were two perforations, one of entrance and one of exit, the bullet having lodged in the muscles of the back. This patient, a boy, recovered, and is well to-day. In one of the cases there were fifteen perforations of the bowel. In some he had resected as much as two feet of the small intestine.

DR. SAMUEL E. MILLIKEN had encountered one case of gunshot wound of the abdomen in a child, seven years of age, who had received the contents of a shotgun. He performed a laparotomy, and the child recovered.

DR. J. D. BLOOM said the diagnosis of penetrating wounds of the abdominal viscera was very essential in deciding on an operation. He mentioned the case of a man who was brought into the Charity Hospital, where it was thought that the peritoneal cavity had been penetrated, but laparotomy disclosed that there was no penetration. He recalled a number of cases that recovered when the operation was done within twenty-four to thirty-six hours after being shot.

DR. W. E. B. DAVIS of Birmingham, Ala., said the question to be settled was whether every case of penetrating wound of the abdomen should be operated on. He believes that every such case should be so treated. He condemned the Senn gas test, and said that the teachings of this eminent surgeon in regard to gunshot wounds of the abdomen were harmful in that they had created a sentiment which made it exceedingly difficult in certain communities to operate on cases of penetrating wounds of the abdomen, because if the patient should die the surgeon would be censured, and discredit cast upon surgery.

DR. F. W. MCRAE had seen and operated on five cases of gunshot wounds of the abdomen at the Grady Hospital. The point of entrance of the bullet was above the umbilicus, the injury having been received when the patient was standing, and in every one of them there were numerous perforations of the hollow viscera. In military practice, he said, wounds were received by soldiers who had been fasting for a number of hours, and the intestines were empty; extravasation was not so likely to occur. On the other hand, in civil practice wounds were almost always received under conditions of more or less debauchery, when the stomach was loaded with whisky, beer, food, limburger, etc., consequently extravasation of the contents took place rapidly, and death was much more apt to take place. He considered the Senn gas-test

worse than useless, it being merely corroborative, not conclusive as to penetration of the viscera.

DR. GRANT, in closing, said he had enunciated a few surgical principles, and he hoped the Fellows would conclude that it was the duty of the surgeon to operate as much on a penetrating wound of the abdomen as it was in cases of strangulated hernia.

FIRST DAY—AFTERNOON SESSION.

DR. RUDOLPH MATAS of New Orleans presented a paper in which he gave the history of pulmonary insufflation and artificial respiration in intrathoracic surgery by intubation of the larynx, exhibited an apparatus, and demonstrated its application. In summing up the peculiarities of the apparatus he had shown he called attention to the following points: (1) The original O'Dwyer cannula, while retaining its intralaryngeal portion unchanged, is modified so that it may be utilized, first, as a respirator; second, as a tampon cannula; third as an anesthetic; fourth, as a tractor and tongue; fifth, as an insufflator; sixth, as an aspirator.

(To be Continued.)

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, November 2, 1899.

THE President, DR. WILLIAM H. THOMPSON, in the Chair.

The paper of the evening, read by DR. ANDREW H. SMITH, was entitled

THE TREATMENT OF PNEUMONIA AS BASED UPON ITS RECENT PATHOLOGY.

It will be found on page 777 of the present issue of the MEDICAL NEWS.

The discussion of the paper was opened by DR. FRANK W. JACKSON, who said: We are practically agreed that there is no specific for pneumonia. All of the many remedies that have been recommended are about equally good. A reports 106 cases cured by one method. B goes him one better and reports 107 cases treated by a diametrically opposite method with equally good results. It is not the pneumonia that is to be treated; it is the individual in each case to whom it is important to adapt our remedies. I am myself a pupil of Dr. Leaming, and I believed for a long time in the efficacy of very large doses of calomel, 30, 40, even as high as sixty grains. It certainly never seemed to do any injury, and the patient often sank into a quiet slumber shortly after its administration. A temperature of 105° F. would fall to 101° F.; a restless patient would be quieted, but in twelve hours all the symptoms had reasserted themselves, and the calomel often refused to work as favorably the second time. Three years ago I treated an old man who had a severe case of pneumonia with ¼-grain doses of calomel, and they seemed to have as good an effect as the large doses of years ago.

I think it is hopeless to try to abort pneumonia even if we reach the case after it has been in progress for only five or six hours. No method of treatment will accom-

plish this. At Roosevelt Hospital twenty years ago large doses of quinin internally and an oiled-silk jacket externally constituted routine treatment. If a member of the staff came along and found one of his patients without this combination treatment there was a row. Yet after a good trial of this method in a hospital where patients can be seen often it was given up as ineffectual.

As to creosote, there is not so much to be said in its favor more than for either calomel or quinin. I have never found it to do much good in tuberculosis, and have never noticed any benefit in pneumonia. It is of benefit in bronchitis. It softens the cough, and this is the secret of its influence in tuberculosis. I have had very little experience with the salicylates. When pneumonia comes, however, it does not announce how long it is going to last, and so we can not be sure of the effect of any given remedy. The crisis may occur thirty-six hours after we begin any treatment. It may occur twenty-four hours after acute symptoms have set in without any treatment. I would like very much to have Dr. Smith's faith in the possibility of creosote aborting the disease if taken early enough, but I have not.

In some cases scarcely more treatment is required than for a simple fever, and active treatment would do harm. In some patients there is intense prostration and septic fever from the very beginning. In these stimulants and digitalis for the heart are very good, though this latter drug should not be used unless absolutely required. In other cases restlessness is the main feature. Then opium is advisable, though this is not recommended in the textbooks.

DR. ALFRED MEYER said: The principle to treat the patient not the disease in every affection is the only one worth any consideration from a rational physician. This fact to-night's discussion promises to bring out very clearly. The pathology of pneumonia as presented by Dr. Smith is most fascinating. Yet I do not agree with his conclusions in the matter. Dr. Smith insists that if pneumonia were really an inflammation of the lungs, a genuine pneumonitis, it would not get better so rapidly, and it would leave more lasting changes. It must be remembered, however, that inflammations differ very much in different tissues, and that the picture presented in the lungs will be necessarily very different from that which would be observed in a more solid organ. There is no doubt that changes of a substantially inflammatory character occur in the cells lining the alveoli sufficient to stamp the affection as an inflammation. As to the necessity for permanent changes in the tissues after inflammation, it must be remembered that such characteristic inflammations as erysipelas of the face or sun-burn recover without leaving permanent tissue changes. There is no doubt for other reasons that pneumonia is a true inflammation of the lungs. By continuity the pleura and the pericardium may also become infected, and in these structures the pleurisy and pericarditis that are set up are surely of an inflammatory nature.

As to the treatment of inflammation, it is hard to say anything definite. There are cases that run a very brief course, and any remedy that is given will seem to have-

aborted the inflammation. In my own experience large doses of salicylates have given me the best satisfaction in the treatment of pneumonia. I consider this drug much better than digitalis, which is so highly recommended by Petrescu. Petrescu shows a good set of statistics treated with digitalis, but all his cases occurred in young soldiers, the picked men of the country, and practically any method of treatment, or even no treatment at all, would have given as good results.

At Mt. Sinai Hospital results have improved very much in the past ten years in the treatment of pneumonia. While in 1887 the death-rate was thirty-seven per cent., in 1897 it was scarcely more than eight per cent.

DR. CHAPIN said: In children the main symptom of pneumonia is the toxemia that so often is developed. In children the right heart is comparatively very strong, and as a consequence one does not often see the symptoms of dyspnea which are so common in adults. This is probably the reason why so few cases of croupous pneumonia are fatal in children, and this seems a rather strong argument against the efficiency of specific bacteriologic treatment. If we can but strengthen the right heart sufficiently to enable it to overcome the obstacle to the circulation in the lungs the patient's safety is assured. I previously used creosote, but have abandoned it. I have found that the presence of steam in the room is of great service. It especially lessens the tendency to the hacking cough which is sometimes so hard to control. I have found plain steam quite as efficient as any medicated vapor. I have often used nitroglycerin, and have been very well satisfied with the results. Dr. Smith's teaching as to the pathology of pneumonia will undoubtedly do good if for no other reason than its suggestiveness. The principle of the germicidal treatment does not work well in practice. All germicides are depressant. For this reason I do not like large doses of salicylates nor of calomel. The fact is that in certain years we see a series of much severer cases of pneumonia than in other years, cases that are of the septic type from the beginning, that are modified by secondary infection, that have an influenza element in them, and these are not relieved by large doses of antiseptics.

DR. EDWARD K. DUNHAM said: I should regret very much to see pneumonia taken from the list of inflammations, for I am accustomed to demonstrate it to my class every year as an example of acute exudative inflammation. There is no essential difference between the inflammatory process of acute lobar pneumonia and that of acute pleurisy, or of lepto-meningitis. Under the microscope one cannot be separated from the other. The same process that occurs in the whole lobe of a lung in pneumonia occurs in small foci of pneumonic tissue after other irritative agents. Good examples of this may be seen around a tubercular nodule in the lung or in the neighborhood of a hemorrhagic infarct. Not only does the exudation show that there is a genuine inflammation, but also the reaction in the cells of the alveolar walls proclaims the same fact. I have here under microscopes four specimens; first, a section of pia mater affected by fibropurulent lepto-meningitis; second, croupous pneumonia;

third, the alveolar wall of a lung with an increase of tissue under rejuvenescence of the cells, and, fourth, an alveolar wall from a case of edema, without any inflammatory production of tissue. I think that a glance at these specimens will show how closely pneumonia resembles the processes which all admit to be inflammatory, and how different it is from those in which there is no inflammation. In pneumonia the cells take on certain very characteristic inflammatory changes. The nuclei become enlarged, the chromatin is increased, and the cells generally are in a plastic state. With reference to the clots that are often found in the pneumonic vessels post-mortem, it is more than probable that these have been formed after death. In a case of pneumonia all the elements for fibrin formation are abundantly present, and a stoppage of the circulation would be the signal for the exercise of this property.

DR. WILLIAM H. THOMPSON said: It is very interesting to contrast typhoid fever and pneumonia, the two most fatal diseases of mid-life. In both diseases patients die of toxemia. In both the prognosis of the case depends to a large extent on what the patients take into the disease with them, that is, the condition at the beginning of the illness is the important element in the prognosis. There all similarity stops. Typhoid gets better by lysis; pneumonia by a typical crisis. We have learned so to treat typhoid that the death-rate is comparatively low. Of 344 cases that have been in my care for more than a week at the Roosevelt Hospital only three per cent. died. Pneumonia is very different, and one seems almost perfectly helpless in the presence of certain severe cases. We must look for an antitoxin for the disease. Its self-limitation points to the fact that an antitoxin really exists. Despite failures I believe that it will yet be found. We certainly have as yet no specific remedy.

I believed for a time that I had found a specific for pneumonia in the internal administration of chloroform, and still believe that 30 minims of chloroform administered at the time of the chill will often abort a threatened pneumonia in a few hours. I first tried the remedy on a series of ten cases of the unfavorable kind that come to Bellevue, men whose systems are thoroughly broken down by the use of alcohol and for whom the prognosis is as well-known is unfavorable. Every one of the cases recovered though some of them seemed very unpromising at the beginning. I began to try it then in my private practice. Certain unpleasant symptoms occurred, however, and in two cases unaccountable sudden death occurred and so I have abandoned it. A combination of carbolic acid and chloroform constitutes the best remedy we have. It acts as a true germicide and does not seem to affect the vitality of the tissues at all. Recently in cases of double pneumonia I have had excellent success with 20-grain doses of creosote carbonate, creosotal, administered every two hours. A very palatable emulsion can be made of the drug and patients take it readily. I have recently had three most unpromising double pneumonias recover under this treatment. When there develops in double pneumonia the tracheal r le, which is usually so threatening a symptom and of sinister omen, I

have found that turning the patient over on the abdomen and making pressure on the back relieves the symptoms at once.

DR. CROOK said: Pneumonia has the typical signs of an inflammation. The color, dolor, tumor, mentioned by Galen are all present besides a fibrinous exudation, which combine to show that an inflammatory process has been at work in the tissues. The fact of its complete resolution rather confirms its designation as an inflammation than argues against it, since all mild inflammations, bronchitis, pharyngitis, and the like undergo resolution without leaving structural changes behind. It is probable that in fatal cases not only is the pulmonary circulation affected by the inflammatory process in the pneumonia but that the bronchial circulation is also affected. Something that is not sufficiently borne in mind is that pneumonia like other inflammatory processes is often contagious. This the investigation of the British Medical Association some time ago showed very clearly.

DR. SMITH said in closing the discussion that no one in treating of pneumonia had ever before adverted to the double circulation in the lung. Volumes, even libraries, had been written on the subject without any consideration being given to this important fact which completely changes the conditions from those that exist anywhere else in the body. The pneumococcus produces inflammation of serous membranes, of the meninges of the brain, of the pericardium, of the pleura, but no crisis ever occurs in these cases. Pneumonia ends with a crisis precisely because it is situated as it is in the midst of the double circulation of the lung and practically outside of lung tissue. The germ is killed by the products of its own metabolism, by its own urine as it were. Of these products the principal ones that have been obtained by analysis are pneumatic acid and pneumatized soda. These practically produce the crisis. Their accumulation in the exudate makes an acid medium on which the pneumococcus has to grow and the slightest acidity of culture medium, as is well known to bacteriologists immediately causes the death of the pneumococcus. This is the explanation of the crisis. It is not due to the inflammatory process having reached an acme with sudden subsidence, as some have explained. If a process so extensive and serious as is pneumonia were to occur in the delicate tissue of the lung it would surely leave more important permanent changes than are ever found after pneumonia. We would surely find such changes in the liver, the kidney or the spleen. The reason why we do not find them in the lung is that pneumonia is not really an inflammation.

REVIEWS.

TEXT-BOOK OF THE EMBRYOLOGY OF THE INVERTEBRATES. BY DR. E. KORSCHULT, Professor of Zoology and Comparative Anatomy in the University of Marburg; and DR. K. HEIDER, Professor of Zoology in the University of Berlin. Translated from the German by Matilda Bernard. Revised and edited by Martin F.

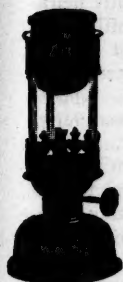
Woodward, Demonstrator of Zoology in the Royal College of Science, London. Vols. II. and III. London: Swan, Sonnenschein & Co. New York: The Macmillan Co., 1899.

IN Cassino's "Naturalists' Directory of the United States" the names of at least ten thousand persons interested in natural history subjects are given. Of these between ten and fifteen per cent. are physicians, and it therefore seems distinctly proper to mention in this place a work which is so essentially in the line of the naturalist. Korschelt and Heider's "Invertebrate Embryology" has been known for years among German-reading students of zoology as the standard text-book in this branch of research, and it is fortunate that the first volume, which appeared in translation in 1895, is now further completed by Volumes II. and III., because the many interesting problems of invertebrate embryology are now made accessible for the first time to the English student.

The present volumes are concerned mainly with the consideration of the developmental stages of the Bryozoa, Brachiopoda, Crustacea, Arachnida, Myriopoda, and Insects. For the technical student of embryology there is nothing to take the place of this excellent work and the natural historian of laboratory proclivities will find it a trustworthy guide as well as a stimulus to scientific research. The mechanical execution is of the well-known excellent quality of the publishers, to whom the technical scientific world has been so often particularly indebted.

THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE NOSE, THROAT, NASO-PHARYNX, AND TRACHEA. For the Use of Students and Practitioners. By CORNELIUS G. COAKLEY, M.D., Professor of Laryngology in the University and Bellevue Hospital Medical College, New York. Illustrated. Philadelphia and New York: Lea Brothers & Co., 1899.

THIS manual of rhinology and laryngology, which is primarily adapted to the needs of the student, impresses one very favorably by the excellent way in which the entire field has been covered, without a single paragraph having been wasted on unessential details or on theoretical considerations. The introductory chapters on anatomy and physiology are brief and to the point; the author's style here, as indeed it is throughout the work, clear, terse, impressive. In the chapters on treatment a departure has been made from the usual presentation of the subject of therapeutics, and a wise discrimination and limitation of procedures to those actually approved by the author's experience is made evident. Where surgical intervention is advised the best operation is accurately but briefly described. A special chapter of practical importance has been added which deals with the different rhinological and laryngological remedies and the manner of their application. The drugs are classified according to their local action, and a number of useful prescriptions with the indication for their employment are given. The work is a convenient and inexpensive student's guide to the entire field of diseases of the nose and throat, which may be recommended as a complete and trustworthy summary of the subject.



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Walker (*The Journal of Practical Medicine*) observes that the phenomena of life and the essentials of health consist of the maintenance of the proper equilibrium between supply and waste. We often see thin, pale and spindle-legged children who eat more food than others of the same age who are plump and ruddy. In treatment the question is not one of taking more food, but of enabling the patient to derive more benefit from the food taken. If the digestive functions cannot be stimulated to do more work the food must be digested in part artificially. This supplementary digestion must be continued until the natural processes are again sufficient for the task. In a rightly proportioned diet the farinaceous elements present are to the proteids as three to one. Clinically we find the largest proportion of dyspeptics suffering from amylaceous indigestion. In the effort to give relief it is not enough simply to restrict the diet to food containing little or no starch. Elements of too great importance are thus cut off and nature rebels. Artificial digestants must be employed, and preference should always be given those which digest starches. Diastase is best suited to these cases, because it is capable of changing many times its own bulk of starch into soluble maltose. Maltzyme, which is a malt extract very rich in diastase, is the most convenient and best form in which to administer diastase. It is employed with success in nearly every case of amylaceous indigestion and mal-nutrition.

Treatment of Chronic Dyspepsia. Shoemaker (*New York Medical Journal*, July 22, 1899) reports a number of cases of chronic dyspepsia treated exclusively with Buffalo lithia water. He calls attention to the various remote ailments which are sure to follow long-continued dyspepsia. Chief among these is hepatic insufficiency and the well-known sequels, chronic rheumatism, gout and lithemia. While acute rheumatism is undoubtedly due to the activity of a specific micro-organism, digestive derangements are closely related to this activity. Chronic rheumatism is indisputably allied with lesions of the digestive functions. The same is true of the class of affections known as gout or lithemia. In other directions Bright's disease, calculi and diabetes mellitus are the outcome of habitual or chronic indigestion. Auto-intoxications of intestinal origin assume a variety of forms, and occur in different degrees of intensity. Therefore the best form of treatment of any failure of digestion, always aims to counteract all these tendencies. In many cases of the most aggravated type Buffalo lithia water has a very beneficial influence. It regulates the action of the bowels and kidneys, dispels flatus, relieves palpitation, clears the complexion and improves digestion.

Prophylactic Treatment. Under the head of "Latent Rheumatic Conditions" (*The Medical Sen-*

tinel, Nov., 1899) attention is directed to the indications for treatment in patients who are really neither sick or yet well. Physicians are frequently called upon to treat such. A diagnosis is not possible, because their affection is ill-defined and latent. The following clinical picture is frequently seen: Appetite capricious; sleep, whether good, bad or indifferent, not restful; vague pains about the loins; a general feeling of weight and fatigue, etc. Upon examination the urine is found loaded with phosphates and contains an excess of uric acid with probably a trace of bile. The emunctories are inadequate under existing conditions to rid the system of waste and superfluous products and require stimulation. Tongaline (or other remedies of this type) is indicated. It rids the system of waste products and restores the normal secretory processes. Tongaline should always be administered in copious draughts of water as hot as can be borne, preferably one-half hour before each daily meal, or morning and night.

Treatment of a Scald. Saegel (*American Medical Journal*) reports an extensive scald in a child of seven. She had pulled a pot of boiling coffee upon herself, and when undressed it was found that her breast and one arm were deeply scalded. He applied carron oil a few times, but the intense suffering continued. Vitogen was substituted, and after the third application all pain was gone and healing had begun. The powder was freely applied to cover the entire wound, with the result that within ten days the child completely recovered and no scars were left.

Unguentin. Clausen (*Louisville Medical Journal*, June, 1899) speaks of unguentin as a notable modification of Sir Astley Cooper's alum ointment. The improvement is made by the addition of carbolic acid and ichthyol, and by substituting for cerate a petroleum base. In the process of preparation most of the astringent and all the irritating properties are removed. It is properly employed in a thin film, which totally excludes the air from the wound. When so employed the effects are most grateful and beneficial, being antiseptic, astringent, soothing and healing. Unguentin is indicated in skin affections generally and as a surgical dressing for all wounds.

Sterilizing Milk. Attention is called (*Archives of Pediatrics*) to the different opinions which physicians hold relative to the best temperature to employ for sterilizing milk. All agree on the importance of sterilization and recognize that in many instances it is imperative that only sterilized milk be employed. Those who advocated the low temperature process (Pasteurizing) claim that when a higher temperature is employed a detrimental chemical change takes place which renders the milk less easily digested. Others have no regard for this change and hold that safety lies only in bringing the milk to the boiling point. Arnold's Steam Sterilizers are so constructed that either method may be employed with great facility. Whether used for Pasteurizing or for sterilizing, the milk is rendered perfectly sterile.

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The Seventy-eighth Session begins October 2nd, 1899, and continues for Seven Months, Four-Year Course Required. Instruction is given by lectures, clinical and laboratory demonstrations in Anatomy, Physiology, Chemistry, Materia Medica, Surgery, Practice, Obstetrics, Normal and Pathological Histology, Hygiene and Bacteriology, Ophthalmology, Laryngology and Otolaryngology, Gynecology, Dermatology, Neurology, Diseases of Children, Medical Jurisprudence. The clinical facilities of the University and other Hospitals are ample and the laboratories well equipped. For the Annual announcement address
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Rich Blood, Red Blood,
Blood with plenty of hæmoglobin

INTEGRITY

and a full modicum
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This is what the pallid anæmic individual needs from whatever cause such blood poverty may arise. The best way to "build blood" is to administer

Pepto-Mangan ("Gude")

This palatable combination of Organic Iron and Manganese contributes to the vital fluid the necessary oxygen-carrying and hæmoglobin-producing elements and thus brings about a pronounced betterment in cases of Simple or Chlorotic Anæmia, Amenorrhœa, Bright's Disease, Chorea, Dysmenorrhœa, etc.

In order to be sure of obtaining the genuine Pepto-Mangan "Gude" prescribe an original bottle, holding $\frac{1}{2}$ xl. IT'S NEVER SOLD IN BULK.

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To induce catharsis without the objectionable sequelæ common to a majority of laxatives, no remedy responds to the need of the physician with more satisfaction and celerity than SYRUP OF FIGS. As made by the California Fig Syrup Co. from the highest grade Alexandria Senna, SYRUP OF FIGS has achieved a potency and recognition as an agent of established therapeutic worth. There is no preparation that stimulates Nature so well in its effect. No other is better suited to the permanent relief of intestinal inactivity, a functional derangement directly responsible for the condition described as constipation. Its gentle effect upon the intestinal mucous membrane and the natural peristalsis which follows the administration of SYRUP OF FIGS gives to it a unique value as a laxative, and suggests its adaptability to women and children because of its agreeable taste and persuasive action. It is invaluable to persons who through infirmity or occupation are committed to a sedentary life. It is *simple, safe and reliable*, and possesses the particular merit that its use does not induce the cathartic-taking habit, and in all cases where a laxative is indicated it is a help and not a hindrance.

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Chicago Mortality 4.78 per cent.

In Chicago during the months of November and December, 1898, and January and February, 1899, there were treated with Parke, Davis & Co.'s Antidiphtheritic Serum by the Antitoxin Staff of the Chicago Health Department 418 cases (microscopically verified), with 20 deaths—a mortality of 4.78 per cent.



Denver Mortality 3.5 per cent.

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Panopepton on its Merits

We have, as a rule, recommended PANOPEPTON to be taken pure, or simply diluted with water, for the reason that Panopepton is by itself the most agreeable, comprehensive and adequate nutrient for the sick. PANOPEPTON does not require to be "mixed with milk", soup, or any other food. Used by itself, Panopepton is placed on its merits as a food for the sick, and the physician is thus enabled to form a correct estimate of its peculiar value and importance as a food per se.

Furthermore, PANOPEPTON is in a great many cases indicated because of its digestibility; to mix it, therefore, with indigestible foods, nullifies the advantages to be derived from the administration of a pre-digested food. Panopepton is the only complete prepared food for the sick; it recruits the digestive functions, and helps the patient to return to the tolerance of ordinary foods.

A tablespoonful of water or whiskey even may pass as a "food" when administered with milk. Panopepton is of the utmost value where other foods cannot be tolerated; when the patient arrives at the point where small quantities of milk and other ordinary foods can be assimilated, then these foods may better be alternated with Panopepton until Panopepton is no longer required.

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